

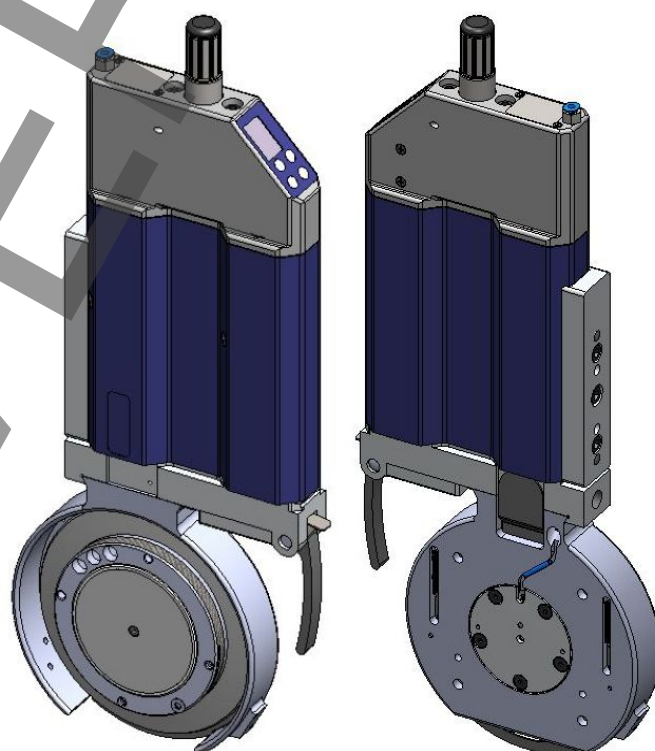
Operator Manual Installation Instruction

DS6S01_EN_00

Shear cut knife holder

DS6-S

245AC74003001



This manual contains important information concerning the safe use of the DIENES product.

The operator must ensure that all persons who are involved in installation, operation and maintenance have read and understood this manual.

The manual must be available at all times to the personnel - please keep it in close proximity to the system.

The original version of this manual was produced in the German language - all other language versions are translations.

This Dienes product has been designed and manufactured in accordance with the applicable basic safety requirements as per the machinery directive 2006/42/EC, and is intended for installation in a machine or production system. This results in interfaces to neighbouring components. The resulting hazards must be taken into consideration and evaluated by the manufacturer or operator, and suitable protective measures must be taken.

For this purpose, DIENES provides an installation declaration in accordance with appendix II part 2 section B of the machinery directive 2006/42/EC, for use during the certification of the machine or production system. Certification and CE marking are carried out by the manufacturer or operator of the machine or production system. This also applies if installation is carried out by or supervised by DIENES.

This product must not be started up until certification of the machine or production system has taken place.

If the product described here is resold in an unchanged form, it is essential that this operation manual is passed on to the new owner.

This operation manual or parts thereof must not be duplicated without written approval from DIENES Werke. The manual must not be handed to third parties. The manual must not be duplicated on electronic media.

The copyright to this operating manual remains vested in:
Dienes Werke, Overath.

Signal words



Danger !

Denotes an immediate threat of danger. Death or extremely serious injuries will occur if it is not avoided.



Warning !

Denotes a potentially dangerous situation. Serious injuries or death may occur if it is not avoided.



Caution !

Denotes a potentially dangerous situation. Minor or slight injuries may occur if it is not avoided.



Caution !

Denotes a situation that will lead to damage to the device if it is not avoided.



Note!

It is imperative that you observe this information.
It will help you in your daily work.

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2 Product Description

2.1 Intended use

The shear cut knife holder type DS-6 is exclusively designed for:

- Slitting a specified material web in conjunction with powered bottom knives.
- Any other or further use is deemed improper use.

DIENES in Overath does not accept any liability for damage caused during or through improper use and the user bears sole responsibility for the risks associated with such use.

Using the product as intended also includes observance of the operating manual, compliance with the manufacturer's operating, maintenance and repair specifications, and the exclusive use of original DIENES spare parts.

If the cutting tool is not used according to these specifications, we cannot guarantee its safe operation.

The responsibility for injuries to persons and damage to property resulting from improper use rests with the user as opposed to DIENES!

2.2 Dienes knife holder type DS6-S (semi-automatic)

P1 Compressed air connection

- 1 Knife holder body
- 2 Knife head
- 3 Dished knife
- 4 Depth adjustment
- 5 Shear angle plate
- 6 Clamp lever
- 7 Retainer options
- 8 Adapter retainer
- 9 360° safety hand guard
- 10 Display / Control

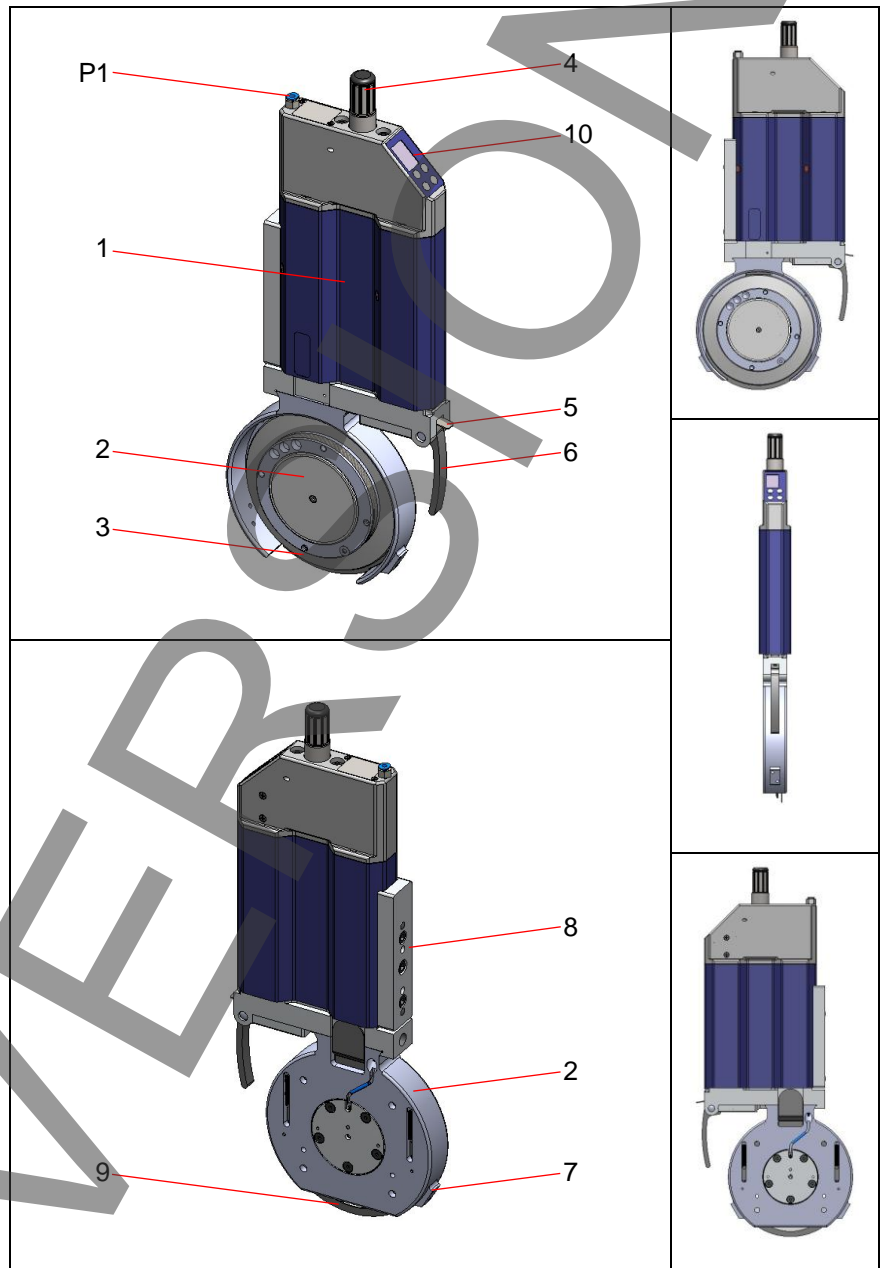


Fig. 1: Knife holder (version: 30mm lift, 1 compressed air connection)

The knife holder is equipped with the following equipment versions, features and options:

Knife holder body versions

- Knife holder with 30mm vertical lift
- Knife holder with 50mm vertical lift
- 1 Compressed air connection, internal forced sequence control

- 2 compressed air connections, requires an external forced sequence control

Knife head versions

- Ø130mm shear cut knife head with dished knife
- Ø150mm shear cut knife head with top knife
- Razor blade cut Ø130mm 3 blades

Knife holder features

- Depth adjusting screw and display with "Teach in" function for precise overlap depth adjustment.
- Toolless shear angle adjustment
- Toolless knife head changing function
- 360° safety hand guard

Optional modules

- Dovetail adapter
- Linear adapter
- Special adapter
- Adjusting slider (take note of infeed direction / head position)
- Lubricating device (take note of infeed direction / head position)
- Separating finger (requires an additional compressed air connection)
- Extraction hood (take note of infeed direction / head position)

2.3 Knife heads

The knife holder can be used with a number of different knife heads and the knife heads can be changed at any time.



Caution!

The cutting point will be different for each knife head, depending on its size.

For this reason, it is vital to take the required installation space or cutting point into account in advance!

2.3.1 Shear cutting knife head with dished knife 130mm

- 1 Prism (retainer)
- 2 Dished knife / transport cover
- 3 Ring nut
- 4 Safety screw
- 5 Compressed air inlet
- 6 Hand guard
- 7 Retainer options
- 8 360° safety hand guard

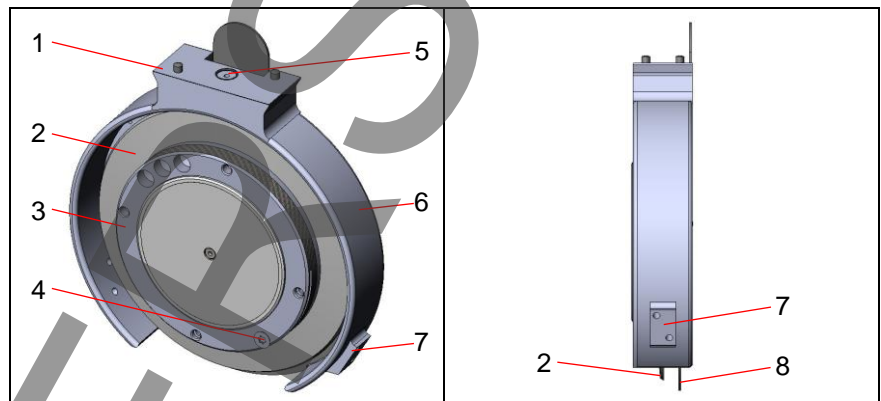


Fig. 2: Shear cutting knife head with dished knife Ø130mm

2.3.2 Shear cutting knife head with dished knife 150mm

- 1 Prism (retainer)
- 2 Dished knife / transport cover
- 3 Ring nut
- 4 Safety screw
- 5 Compressed air inlet
- 6 Hand guard
- 7 Retainer options
- 8 360° safety hand guard

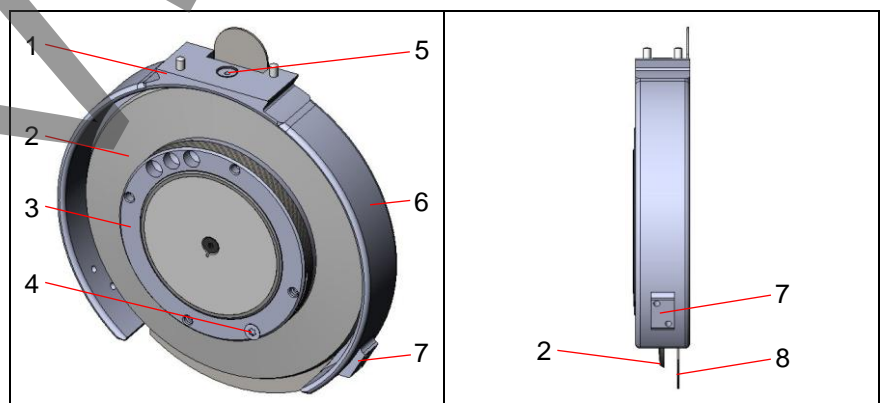


Fig. 3: Shear cutting knife head with dished knife Ø150mm

2.4 Adapter

The knife holder body can be equipped with different adapters.

The adapters suitable for fitting to the knife holder body are dovetail, linear and special adapters.



Please note!

It will not be possible to change an adapter once it has been fitted.

2.4.1 Dovetail adapter

The purpose of the dovetail adapter is to position the shear cut knife holder on a dovetail rail and hold it in place with the setscrew.

- 1 Tightening screw adapter
- 2 Adapter
- 3 Adapter fixing screws
- 4 Clamping piece

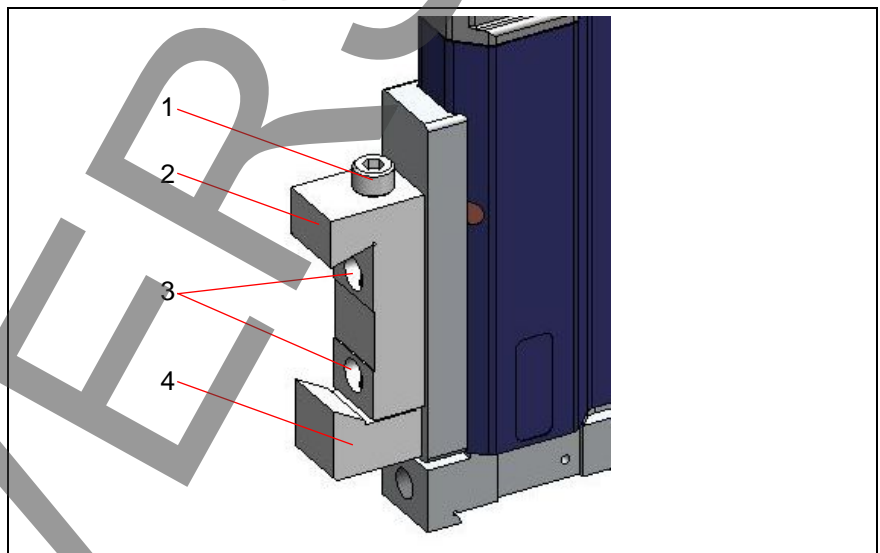


Fig. 4: Dovetail adapter

2.4.2 Linear adapter with pinion adjusting mechanism

The purpose of the linear adapter is to slightly move the shear cut knife holder on linear rails. The hand wheel and pinion are designed for fine-adjusting the linear adapter's position. The shear cut knife holder is fixed in the desired position through a strip steel clamp using the clamping screw. The adapter is fastened to the knife head holder using a clamping bolt and clamping screw.

- 1 Clamp lever clamp
- 2 Hand wheel pinion adjusting mechanism
- 3 Top clamping piece
- 4 Pinion
- 5 Linear adapter
- 6 Linear carriage
- 7 Bottom clamping piece
- 8 Knife holder body
- 9 Tightening screw adapter

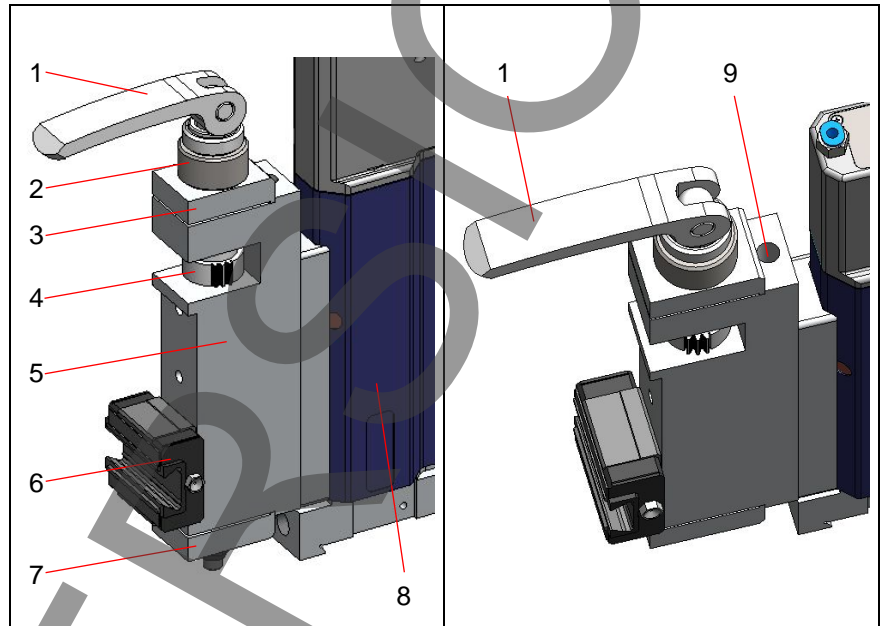


Fig. 5: Linear adapter

2.5 Product data

2.5.1 Technical Data

Component	Knife holder								
Type:	DS6-S								
Item no.:	245AC74003								
Weight approx.: *1	ca.	4.6 kg							
Height: *1	ca.	349 mm							
Width: *1	ca.	38 mm							
Depth: *1	ca.	182 mm							
Vertical lift:	<table><tr><th>Total lift</th><th>Fixed lift</th><th>Variable lift</th></tr><tr><td>30 mm</td><td>20 mm</td><td>10 mm</td></tr></table>			Total lift	Fixed lift	Variable lift	30 mm	20 mm	10 mm
Total lift	Fixed lift	Variable lift							
30 mm	20 mm	10 mm							
Horizontal lift	3 mm								
Knife dimensions	Ø 130 x Ø 80 x s								
Cutting width *1	from 45 mm								
Compressed air supply:	see section on Energy Supply								
Application range	max. 2000 m/min								
*1 can vary according to option									

2.5.2 Energy supply

The knife holder has to be supplied with compressed air for operation. The unit contains a battery for powering the electronics.

The compressed air must be dry, filtered and free from oil. It must be conditioned in compliance with

- ISO 8573-1:2010 Class 7 for particle size
- ISO 8573-1:2010 Class 2 for bio-oils
- ISO 8573-1:2010 Class 4 for mineral oils

Required excess pressures		
Knife holder vertical lift	4 – 6	bar
Knife holder horizontal lift	4 – 6	bar

Power supply for each knife holder (sensor)		Units
Lithium ion battery	9V / 1200mAh	1x

Please note

The required cutting pressure depends on the cutting speed and the composition of the material and must be determined under production conditions.

However, the cutting pressure should not be higher than that required to reliably cut the material web.

2.5.3 Prestressing forces and tightening torques for metric screws

The permissible torques listed in the table below are to be understood only as approximate recommended values and are not binding - see VDI 2230!

Tightening torques for steel set screws

DIN 912 / 931 / 933 / 934 strength classes 8.8 - 12.9

The table values for MA consider: a) Friction value $q_{tot}=0.14$, b) utilisation of the minimum yield strength=90%, c) torsion torque when tightening the frictional coefficient of $q_{tot}=0.14$ applies for the delivered version of screws and nuts without coating, lightly oiled.

Additional lubrication of the threads alters the frictional coefficient considerably and leads to uncertain tightening conditions! Tightening methods and tools have different dispersions (see Tab.1/VDI 2230).

Standard thread

Dimension	Pitch P	Tension cross section As / mm ²	Prestressing force FV (N)			Tightening torque Ma (Nm)		
			8.8	10.9	12.9	8.8	10.9	12.9
M 4	0,7	8,78	3900	5700	6700	3,0	4,4	5,1
M 5	0,8	14,2	6400	9300	10900	5,9	8,7	10
M 6	1,0	20,1	9000	13200	15400	10	15	18
M 8	1,25	36,6	16500	24200	28500	25	36	43
M 10	1,5	58,0	26000	38500	45000	49	72	84
M 12	1,75	84,3	38500	56000	66000	85	125	145
M 14	2,0	115	53000	77000	90000	135	200	235
M 16	2,0	157	72000	106000	124000	210	310	365
M 18	2,5	193	91000	129000	151000	300	430	500
M 20	2,5	245	117000	166000	194000	425	610	710
M 22	2,5	303	146000	208000	243000	580	830	970
M 24	3,0	353	168000	239000	280000	730	1050	1220
M 27	3,0	459	221000	315000	370000	1100	1550	1800
M 30	3,5	561	270000	385000	450000	1450	2100	2450
M 33	3,5	694	335000	480000	560000	2000	2800	3400
M 36	4,0	817	395000	560000	660000	2600	3700	4300
M 39	4,0	976	475000	670000	790000	3400	4800	5600

Fig. 6: Tightening torque standard threads

Fine thread

Dimension	Pitch P	Tension cross section As / mm ²	Prestressing force FV (N)			Tightening torque Ma (Nm)		
			8.8	10.9	12.9	8.8	10.9	12.9
M 8	x 1	39,2	18100	26500	31000	27	40	47
M 10	x 1,25	61,2	28500	41500	48500	54	79	93
M 12	x 1,25	92,1	43000	64000	74000	96	140	165
M 12	x 1,5	88,1	40500	60000	70000	92	135	155
M 14	x 1,5	125	58000	86000	100000	150	220	260
M 16	x 1,5	167	79000	116000	136000	230	340	390
M 18	x 1,5	216	106000	152000	177000	350	490	580
M 20	x 1,5	272	134000	191000	224000	480	690	800
M 22	x 1,5	333	166000	236000	275000	640	920	1070
M 24	x 2	384	189000	270000	315000	810	1160	1350
M 27	x 2	496	245000	350000	410000	1190	1700	2000
M 30	x 2	621	309000	440000	515000	1610	2300	2690

Fig. 7: Tightening torques fine threads

3 Safety

3.1 Operator's duty of care

The operator must ensure that all persons commissioned with installation, operation or maintenance work have read and understood the instructions in this manual.

The manual must be available to the personnel at all times; keep the manual in the vicinity of the system.

All persons working with the product must observe the instructions in this manual, in particular the safety instructions, as well as the rules and regulations applicable for the site.

The generally accepted legal and other regulations and provisions pertaining to the prevention of accidents (e.g. protective equipment) and environmental protection must also be observed in addition to the safety instructions mentioned in this manual.

Serious physical injury or damage to property can result in the event of unqualified interventions in the device or failure to observe the warning instructions given in this documentation or on the device. Accordingly, only personnel with the relevant qualifications may undertake interventions on this device.

Qualified personnel as defined in the safety-related instructions in this documentation or on the product itself are those persons who

- have undergone a course of instruction as operators handling knife holders or cutting systems and are familiar with the operation-related content of this documentation;
- or maintenance and service personnel who are qualified to repair such knife holders or who are licensed to operate knife holders in accordance with safety engineering standards.



Note!

Only personnel with the relevant qualifications may undertake interventions on this device. These employees must be thoroughly acquainted with all sources of danger and maintenance measures in accordance with the information in this documentation. A prerequisite for perfect and safe operation of the product is correct transport, correct storage, assembly and set-up, as well as care in use and maintenance.

3.1.1 EC Machinery Directive

This DIENES product is designed and manufactured in accordance with the applicable basic safety requirements as per the Machinery Directive 2006/42/EC and is intended for installation in a machine or production facility. This involves interfaces to neighbouring components. The manufacturer or operator is liable for taking the resulting hazards into consideration and assessing these and undertaking suitable protective measures.

For this purpose DIENES provides a Declaration of Incorporation in accordance with Annex II Part 1 Section B of the Machinery Directive 2006/42/EC used for the certification of the machine or production facility. Certification and CE-marking are effected by the manufacturer or operator of the machine or production facility. This is also applies to the assembly or supervision of the assembly by DIENES.

Commissioning of the product is prohibited until such time as certification of the machine or production facility has been completed.

3.1.2 Hazards state-of-the-art technology

The DIENES product has been manufactured in accordance with the state of the art and in accordance with the recognised technical safety regulations.

The product is only to be operated if in technically good order and condition as well as according to intended use, with safety and risk-awareness and by observing the operating manual. In particular, any faults which can have a detrimental effect on safety need to be rectified or have to be resolved by a third party.

3.1.3 Reasonably foreseeable misuse

Every use that exceeds maximum performance data is regarded as improper use and is therefore prohibited.

3.1.4 Warranty and liability

Warranty and liability claims for potential personal injury or property damage are excluded

- in compliance with contractual or legal provisions
- in the event of incorrect or improper transport
- in the event of incorrect or improper storage
- in the case of operation that exceeds the specific performance data
- in the event of improper / non-intended use of the product
- in the event of arbitrary and unauthorised modifications
- where maintenance work is not carried out or improperly executed
- in the case of damaged sealing wax / seals
- in the event of non-observance of Dienes specifications for new and reground knives

3.1.5 Spare parts and accessories

We point out that parts and accessories not supplied by DIENES as spare parts and accessories have not been tested and approved by us. Installing or attaching as well the use of such products may possibly influence the constructive specific properties of the system. The manufacturer bears no liability for damage caused through the use of parts and accessories that are not original parts and accessories.

3.2 General safety notices



Danger!

Voltage

Faulty electrical connections or unapproved live parts result in serious injury or even death.

- Electrical connections must only be carried out by qualified personnel.
- Any damaged cables or plugs need to be replaced immediately.



Warning!

Objects tossed around by rotating parts can cause serious injury or even death.

- Remove objects and tools from rotating parts before putting these into operation.



Warning!

Entanglement hazard

Rotating parts can pull in parts of the body and cause severe injuries or even death.

- Keep a sufficient distance to rotating machine components.
- Safeguard the machine against restarting and unintended movement during assembly and maintenance work.



Caution!

Cutting hazard



There is a risk of being cut in the area of the knife edge.

- Always wear protective gloves when working on the knife holder.
- Safeguard the product against restarting and unintended movement during assembly and maintenance work.



Caution!

Crushing hazard

There is a risk of being crushed in the vicinity of the pneumatically controlled knife holders.

- Safeguard the product against restarting and unintended movement during assembly and maintenance work.

**Caution!****Hot surfaces**

Hot machine parts can cause serious burns.

- Only ever touch machine parts while wearing protective gloves or after the machine has been shutdown for a longer period of time.

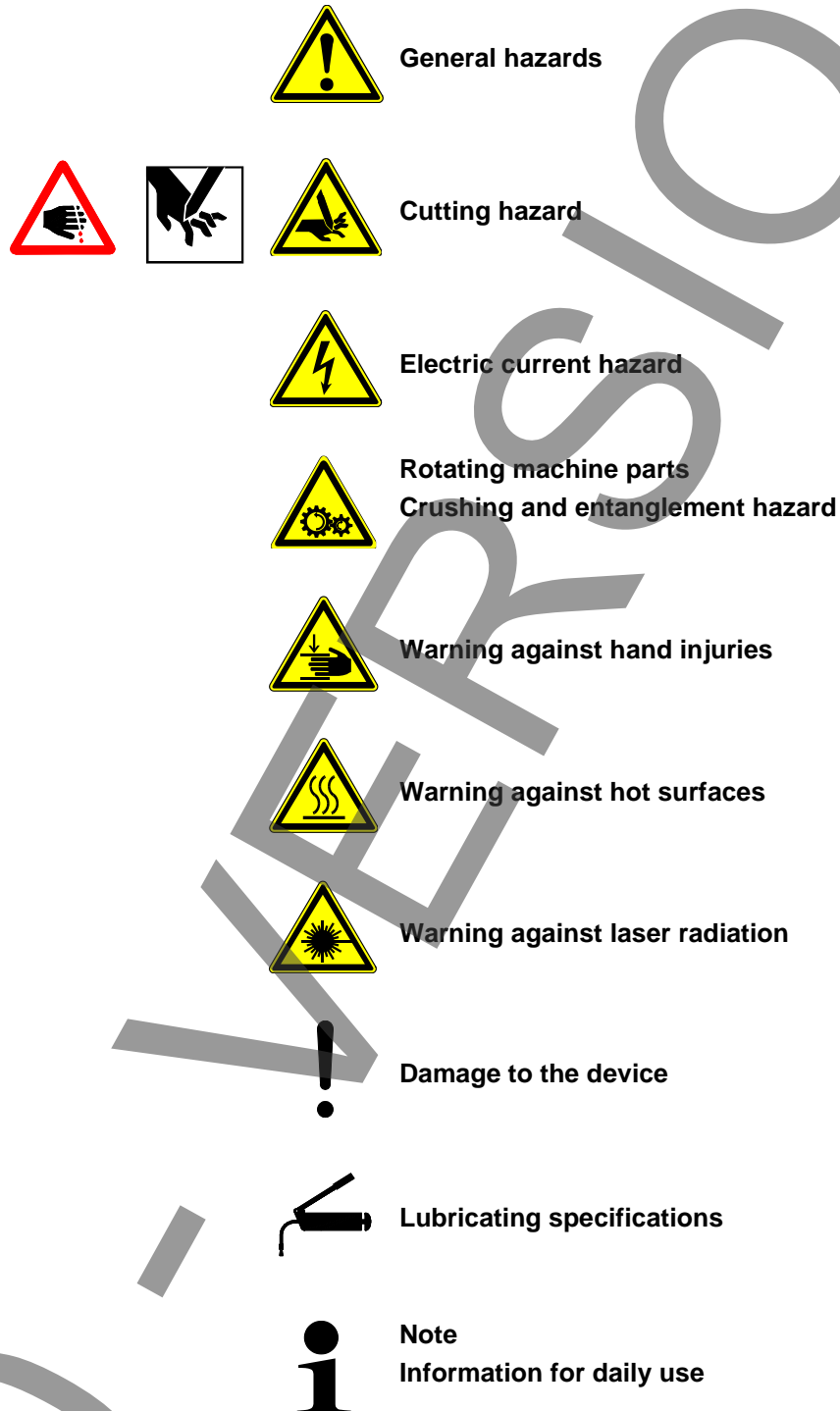
**Caution!****Laser radiation**

- Avoid radiation of the eyes or skin by direct or scattered radiation.

OVERSICHT

3.2.1 Explanation of the safety symbols used

Pictograms warn you against dangers and provide useful notes on safe use:



3.2.2 Attached warning labels and safety equipment

The warning labels affixed to the unit must be observed at all times.



It is very important to remind the operating personnel to make themselves familiar with the position of the individual emergency stop switches before operating the system.



Rotating parts can pull in parts of the body and cause severe injuries or even death.

- Keep at a safe distance from rotating machine components.
- Protect the machine from restarting and unintended movement during assembly and maintenance work..

- This label is attached to every knife holder.
- It alerts people to the fact that sharp cutting tools are in operation, and to keep clear of the blade during operation.



Fig. 8: Warning sign on the knife holder

- 1 Hand guard
- 2 Dished knife
- 3 360° safety hand guard

- The 360° safety hand guard protrudes over the dished knife in the idle position

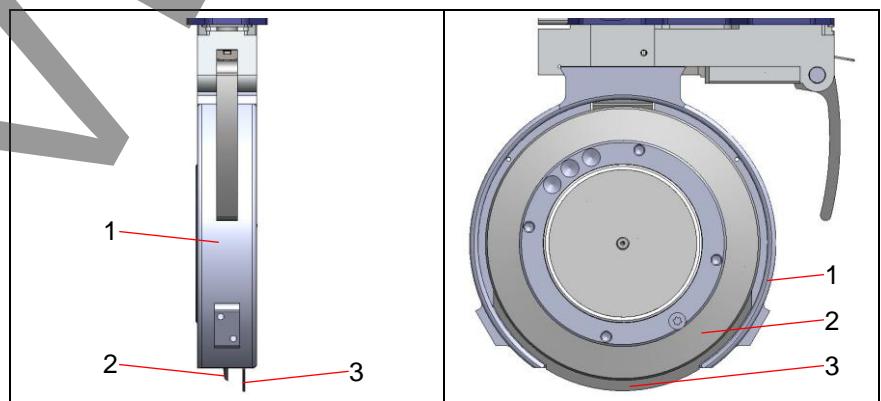


Fig. 9: 360° safety hand guard

i Please note!

As this knife holder is only part of a complete system, the operator of the system has to ensure that the system is protected during operation.

This can be achieved by fitting light curtains or safety doors, for example.

All warning labels and protective devices must be checked at least once a week to make sure they are present and in proper working order.

3.3 Personal safety equipment



“Dienes” safety gloves must always be worn when working on the cutting tools.

(Dienes Order No. =0FHANDS000001)

4 Commissioning

4.1 Interfaces to neighbouring machine components

The DIENES product is designed and manufactured in accordance with applicable basic safety requirements so that it presents no immediate essential danger.

There are interfaces to neighbouring components due to the fact that the DIENES product is intended for incorporation in an existing machine or production facility.

Any existing shaft or other machine parts that give rise to serious hazards in combination with the DIENES products must be given particular consideration here.

The manufacturer is responsible for taking the resulting hazards into consideration and assessing these and undertaking suitable protective measures.

Commissioning is prohibited until such time as the operator has ensured that the complete system complies with the applicable safety requirements.

4.2 Transport

Note!

Individual knife holder types can weigh in excess of 25kg. Weight information can be found in the technical data. Use suitable lifting gear if necessary.



Extreme care and caution must always be taken when working on the knife holder.

When the knife holder is being transported it must be ensured that the knife cannot rotate, and that the knife edge is covered.

- Always wear protective gloves when working on the knife holder. (Dienes order no.: 0FHANDS000001)



Protect knife from slipping and knocks, since any knock will damage the knife edge.

4.3 Assembly

4.3.1 Alignment of the holder



Extreme care and caution must be taken when working with the shear cut knife holder

- Always wear protective gloves when working on the knife holder.
(Dienes Order no.: 0FHANDS000001)
- Protect the machine from restarting and unintended movements.



It is imperative to pay attention to the position of the shear angle plate. See also "Checking the shear angle".

- 1 Knife holder
- 2 Intermediate adapter plate
- 3 Dished knife
- 4 Bottom knife

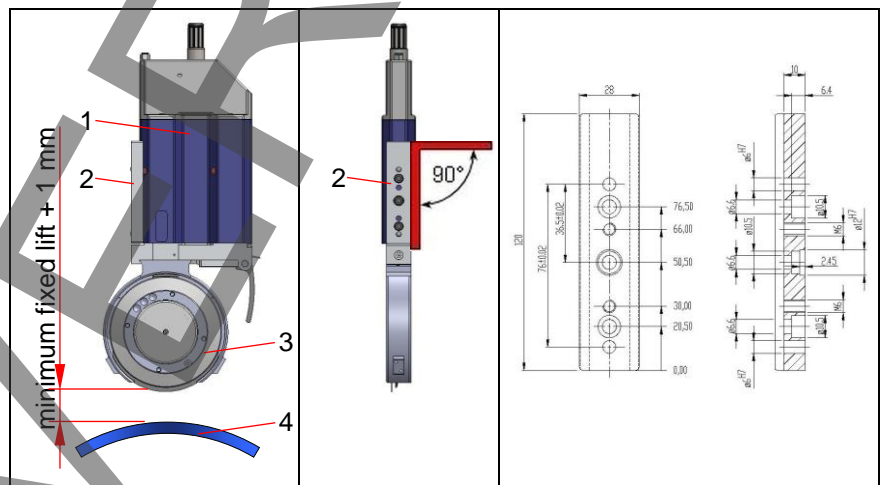


Fig. 10: Holder alignment in idle position, hole pattern

Please note

When fitting the knife holder, it must be ensured that the holder is aligned at a right angle.

Please take note of the following information concerning web guidance and shear angle positioning.

4.4 Commissioning



Before commissioning takes place it must be ensured that the specified pneumatic pressures and electric voltages are not exceeded, in order to prevent potential damage or injuries.

Unintentional operation is extremely dangerous for the operating personnel.



Before the quick-release couplings are plugged into the compressed air supply rails of the machine, it must be ensured that the system is depressurised.

If this is not the case the top knife may be destroyed by its colliding with bottom knife, and the bottom knife may also be damaged.

Suitable pressure adjustment and throttle devices must be provided.

All clamping units on both the top knife holders and bottom knife motors must be tightened

4.4.1 Parameter settings for top and bottom knives

Care must be taken that the top knife and bottom knife are aligned correctly to each other. The cutting position is determined by the bottom knife cutting edge.

Align the knife holder to the bottom knife in compliance with the standard values indicated.

In the idle position the axial distance between the top knife and the bottom knife must be 0.8 mm.

The depth adjustment must be set in such a way that the top knife immerses approx. 0.8 mm below the bottom knife with a completed vertical lift.

- 1 Top knife
- 2 Gauge
- 3 Bottom knife

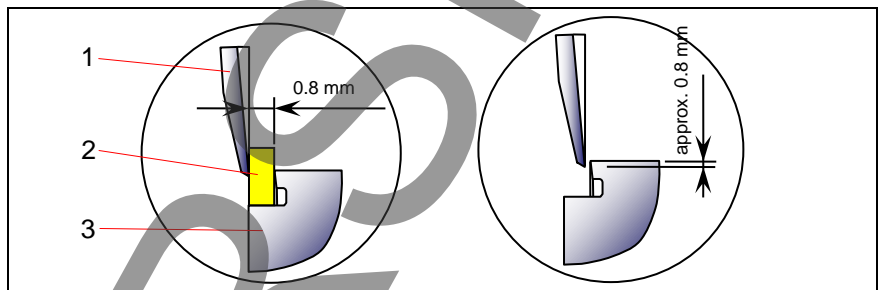


Fig. 11: Parameter settings, standard values between top knife and bottom knife



Please note

The values indicated here are standard values and may vary under production conditions.

4.4.2 Connecting the compressed air supply



Caution

Before the quick-release couplings are plugged into the compressed air supply rails of the machine, it must be ensured that the system is depressurised.

Suitable pressure adjustment and throttle devices must be provided.

The compressed air is supplied via hose connections between the supply channel and the knife holder.

- 1 Knife holder
- 2 Compressed air connection
P1 vertical lift / horizontal lift

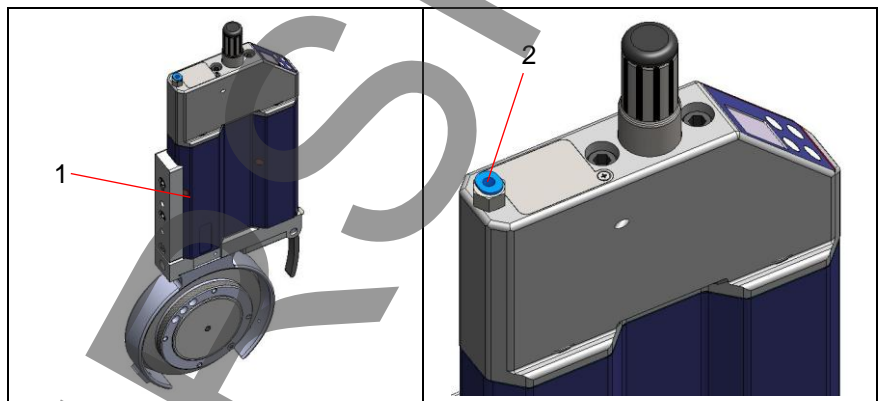


Fig. 12: Compressed air supply.



Please note

The feed movement must take place in the correct order. The vertical lift must be carried out first, and when this is fully extended, the horizontal lift. During the retraction movement, the horizontal lift is carried out first, followed by the vertical lift.

You will find information concerning connecting the compressed air in the section "Energy supply".

The amount of supply pressure that is required depends mainly on the material that is being cut and the operating speed, and must be individually determined under production conditions during commissioning.

4.5 Basic alignment of the depth adjuster

When the shear cut knife holder is put into operation for the first time, the depth setting must be adjusted to the distances in the unit. To do so, the knife overlap first has to be correctly set to zero and then correspondingly saved in the electronic unit. To do so, proceed as follows:

4.5.1 Manually setting the knife overlap to zero

- 1 Depth adjuster
- 2 Electronic unit
- 3 Vertical lift
- 4 Separation per 0.1mm notch

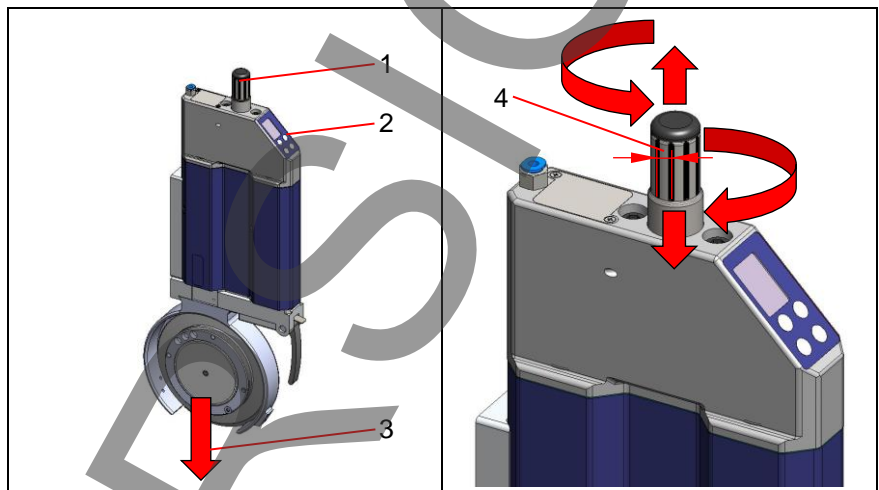


Fig. 13: Depth adjustment

1. Position the knife holder over a bottom knife.
2. Turn the depth adjuster anticlockwise as far as the stop in order to block the adjustable vertical lift. (Depth adjuster viewed from above). The knife holder only performs the fixed lift.



Please note!

Each notch corresponds to a 0.1mm difference in the overlap depth.

3. Check whether the knife head is fully extended and determine the vertical distance between the knife head and bottom knife.
4. Slowly turn the adjusting screw until the top knife is just about touching the bottom knife. Now turn the adjusting screw back by one notch and switch off the compressed air, and then turn the adjusting screw forward by one notch again.
5. Now, use a gauge (plastic gauge) and move the knife holder over the cutting groove and next to the bottom knife so that there is a axial gap of 0.8mm between the two.
6. Increase the compressed air pressure to the operating pressure.

4.5.2 Teaching the control unit

When setting up the unit for the first time, it will be necessary to perform the following one-off actions.

- 1 Display
- 2 Activates the control and changes the values +
- 3 Switches menus
- 4 Changes values –
- 5 Activates the change in values and saves these settings

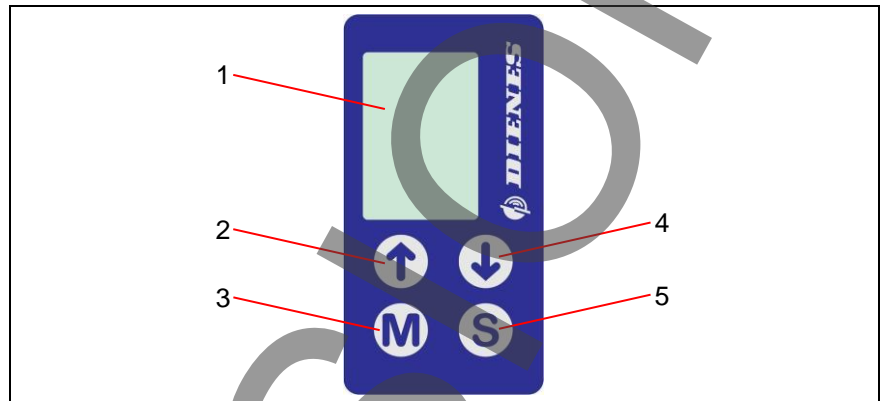



Fig. 14: Display / Control

7. Pressing the  button activates the control unit, after which the "Position" menu or the menu that was last opened will be shown on the screen. Confirm by pressing "S".

- 6 Menu name
- 7 Direction of the adjustment
- 8 Values
- 9 Unit of measurement

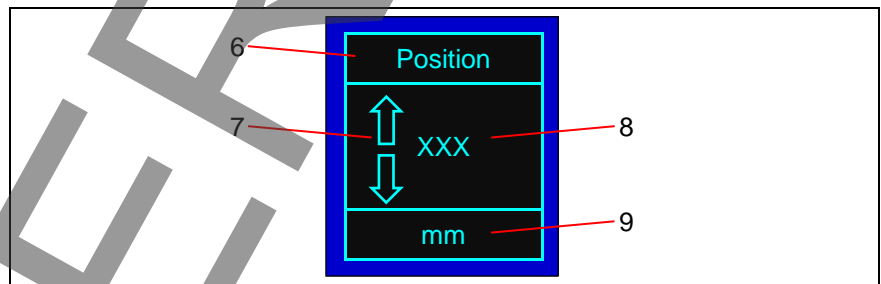


Fig. 15: "Position" menu display

8. Press "M" to switch to the "Overlap" menu.

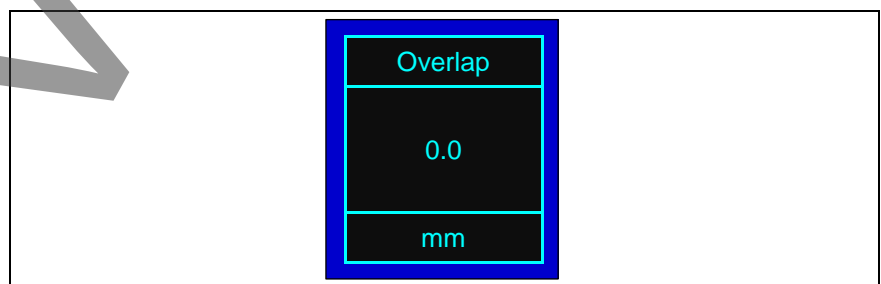


Fig. 16: "Overlap" menu display

9. Adjust the value to "0.0" with the arrow buttons and confirm by pressing "S".
10. Press "M" to switch to the "Knife diameter" menu



Fig. 17: "Knife diameter" menu display

11. Enter the precise knife diameter established for the fitted dished knife with the arrow buttons and confirm by pressing "**S**".
12. Press "**M**" to switch to the "Knife regrinding diameter".

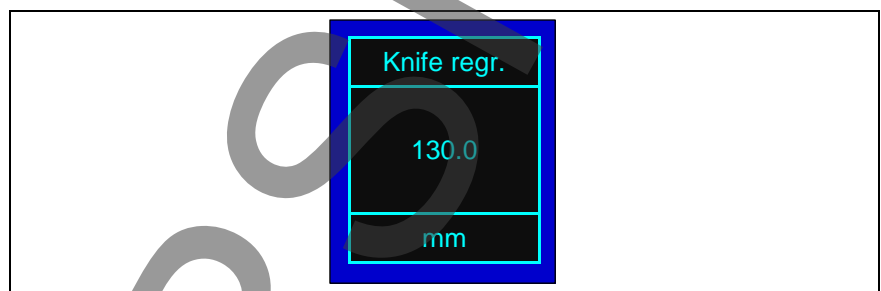


Fig. 18: "Knife regrinding diameter" menu display

13. Adjust the value to the diameter of the knife used with the arrow buttons and confirm by pressing "**S**".
14. Press "**M**" to switch to the "0-point" menu.

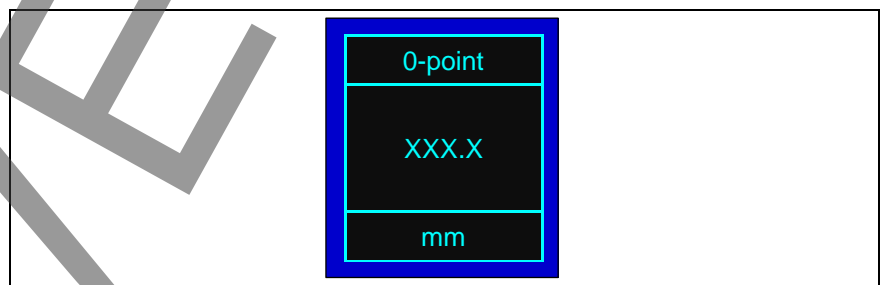


Fig. 19: "0-point" menu display

15. Shows the current distance to the zero point. Confirm by pressing "**S**".
16. Press "**M**" to switch to the "**0-point**" menu.

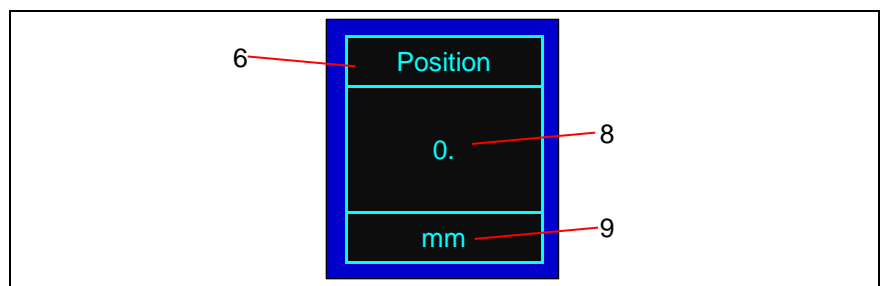


Fig. 20: "Position" menu display

17. The display must show the value "**0.0**". This completes the basic alignment and the knife holder is ready for operation again.

i Please note!

The overlap value may have to be adjusted to the material requirements.

5 Handling and operation

5.1 Safety instructions for the operator



Warning !

It is imperative that the following safety instructions are observed when operating the machine – this will prevent fatal personal injuries, damage to the machines, other material damage and damage to the environment.

Under no circumstances put your hand into the machine while it is in operation!



Caution !

Cutting
hazard

and

crushing



In case of careless handling, the operating personnel is exposed to considerable risk in the traversing range of the positioning slides of the pneumatically controlled knife holders.

“Dienes” safety gloves must always be worn when working on the cutting tools.

(Dienes Order no.: 0FHANDS000001)



Caution !

All clamp levers and screws that have been unscrewed during a change of format must be firmly tightened again afterwards.



Please note !

The accident prevention regulations must be observed.

Safeguard an ample space around the working area before starting adjustment work.

The sequence of the prescribed work steps must be observed exactly.

The knife holders must always be depressurised when work is being carried out on them.

In the case of swivelling systems it must be ensured that these are operated without vibration and are gently swivelled into the end positions.

The cutting system may only be operated by trained and authorised operating personnel.

The operating instructions must be observed exactly.

5.1.1 Qualification of personnel

Qualified personnel as defined in the safety-related instructions in this documentation or on the product itself are those persons who

- have undergone a course of instruction as operators handling knife holders or cutting systems and are familiar with the operation-related content of this documentation;
- or maintenance and service personnel who are qualified to repair such knife holders or who are licensed to operate knife holders in accordance with safety engineering standards.

5.2 Knife holder definitions

The knife holders are defined by the knife head position and the direction from which the web enters. The knife head can either be positioned on the left or right and the web enter from the front or the rear.

This is the basis for the four possible installation positions for knife holders with drawing horizontal lift (Z1 - Z4).

5.2.1 Knife holder Z1, drawing horizontal lift

- 1 View from the front
- 2 Web direction from the front
- 3 Web direction from the rear
- 4 Knife head position left
- 5 Knife head position right
- 6 Shear angle plate
- 7 Drawing horizontal lift

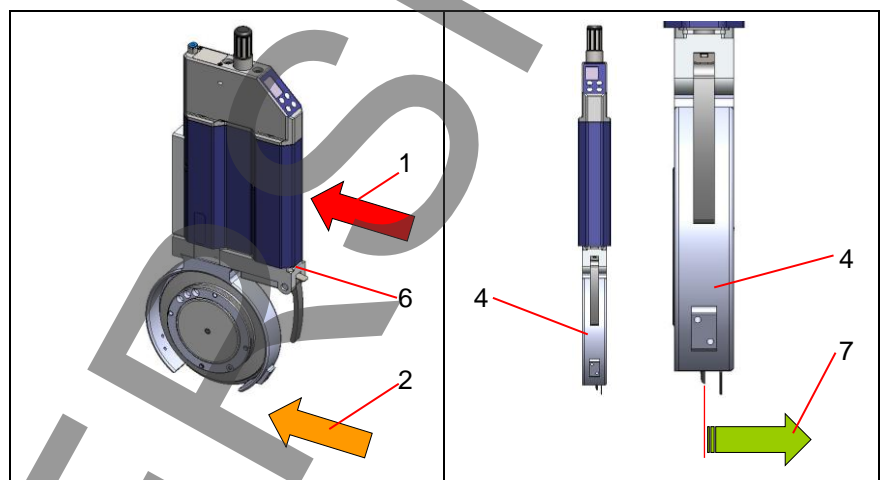


Fig. 21: Z1 = Knife head left, web entry from the front

5.2.2 Knife holder Z2, drawing horizontal lift

- 1 View from the front
- 2 Web direction from the front
- 3 Web direction from the rear
- 4 Knife head position left
- 5 Knife head position right
- 6 Shear angle plate
- 7 Drawing horizontal lift

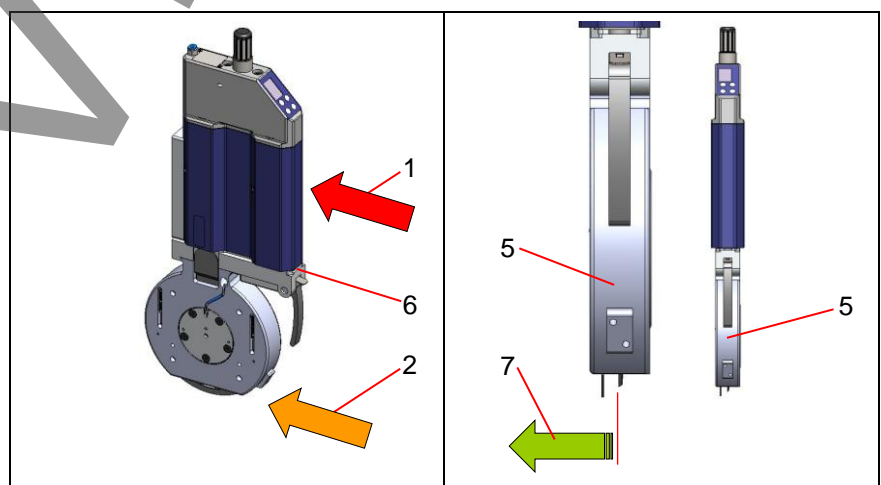


Fig. 22: Z2 = Knife head right, web entry from the front

5.2.3 Knife holder Z1, drawing horizontal lift

- 1 View from the front
- 2 Web direction from the front
- 3 Web direction from the rear
- 4 Knife head position left
- 5 Knife head position right
- 6 Shear angle plate
- 7 Drawing horizontal lift

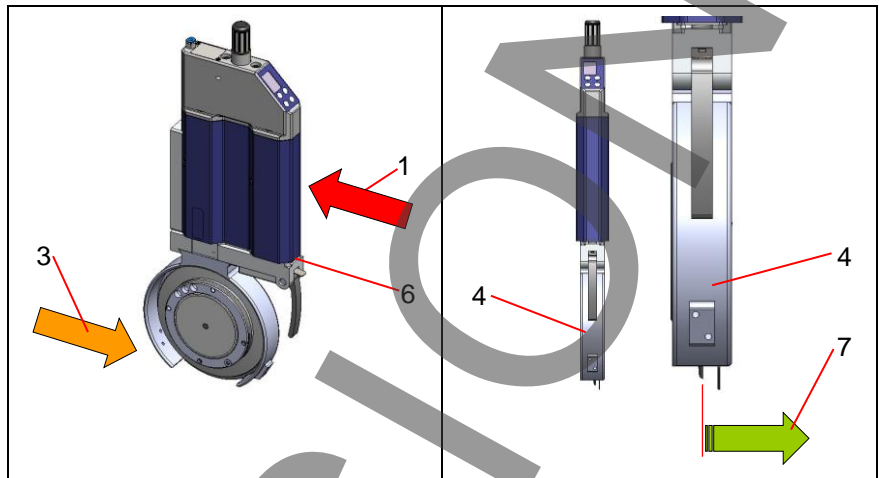


Fig. 23: Z3 = Knife head left, web entry from the rear

5.2.4 Knife holder Z1, drawing horizontal lift

- 1 View from the front
- 2 Web direction from the front
- 3 Web direction from the rear
- 4 Knife head position left
- 5 Knife head position right
- 6 Shear angle plate
- 7 Drawing horizontal lift

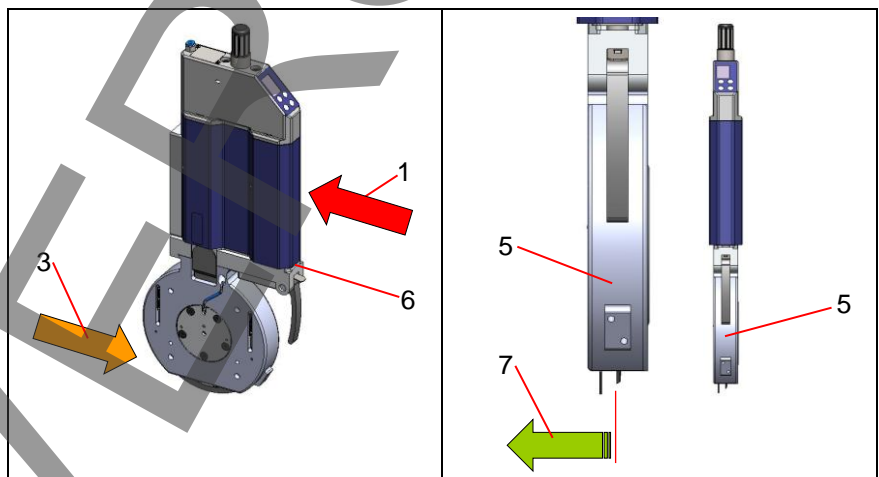


Fig. 24: Z4 = Knife head right, web entry from the rear



Please note!

It is imperative to take into account the position of the shear angle plate depending on the position of the knife head and the direction of web entry.

The knife holders shown here are only intended to illustrate the principle and may differ from the product in question.

5.3 Type of material guide

5.3.1 Tangential

The knife holder is at a 90° angle to the web.

- 1 Top knife
- 2 Bottom knife

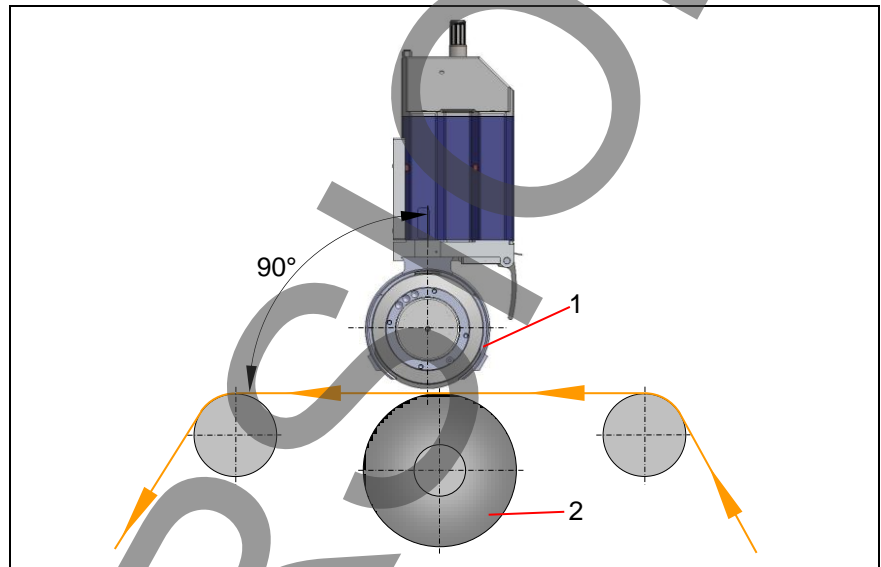


Fig. 25: Web tangential (schematic diagram)

5.3.2 Wrapped

The knife holder is located within the wrapping angle "W".

- 1 Top knife
- 2 Bottom knife

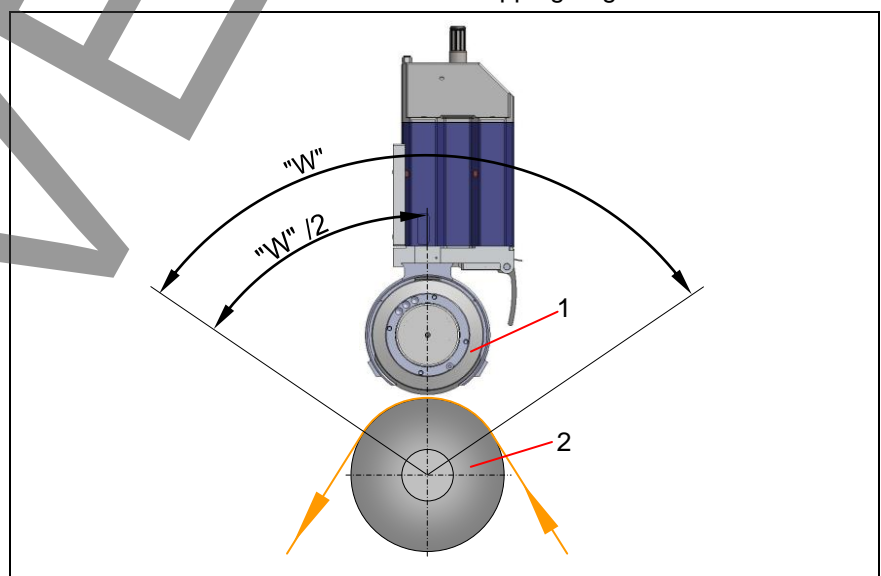


Fig. 26: Wrapped web entry

5.3.3 Specifying the axial offset



Please note!

The axial offset only has to be taken into account when using a tangential cut.

- 1 Top knife
- 2 Bottom knife
- 3 Web entry from the front
- 4 Web entry from the rear
- 5 Axial offset

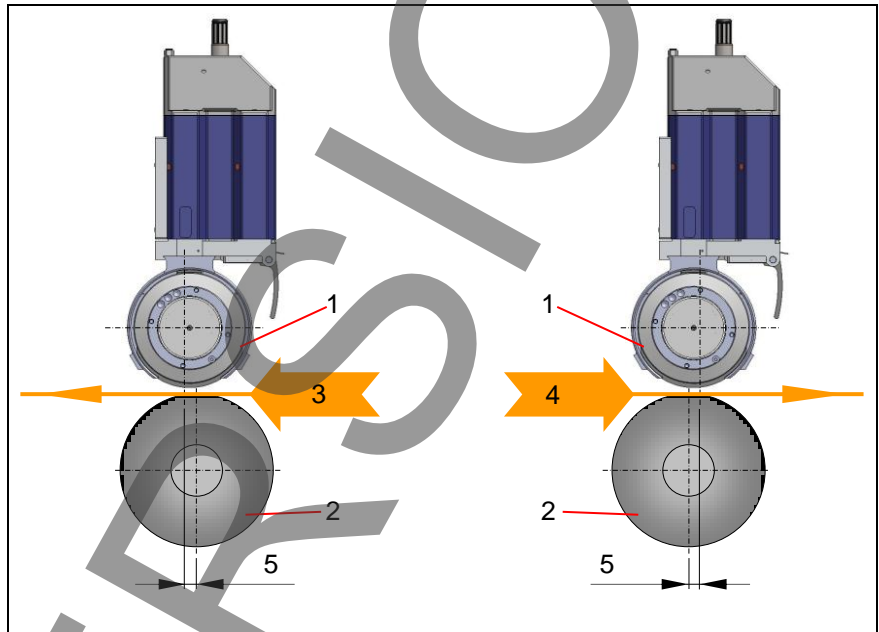


Fig. 27: Axial offset (schematic diagram)

You will find the standard values for axial offset in the table below.

These values are mainly based on the diameter of the top knife and the depth of immersion.

When determining the standard values, a depth of immersion of 0.8 mm is assumed.

Ø Top knife	Ø Bottom knife	Axial offset
130 mm	150 – 250 mm	10.167 mm
150 mm		10.925 mm
200 mm	200 – 300 mm	12.624 mm

Please contact DIENES if you require more information concerning other knife pairs and depths of immersion.

5.4 Adjusting the shear angle

The holder has been pre-set to Z1 30° at the factory. If it needs to be set to a different setting, this has to be done before the unit is commissioned.

The adjustment of the shear angle plate depends on the two possible knife head positions (left or right) and the two possible web entry directions (from the front or the rear). This results in four possible adjustment positions for the knife holder (Z1 – Z4).

5.4.1 Web entry from the front, drawing horizontal lift (Z1 and Z2)

- 1 Crossbar (machine frame)
- 2 Dovetail rail
- 3 Adapter
- 4 Knife holder
- 5 Depth adjuster
- 6 Shear angle plate
- 7 Web entry from the front
- 8 Top knife
- 9 Bottom knife
- 10 Web entry from the rear

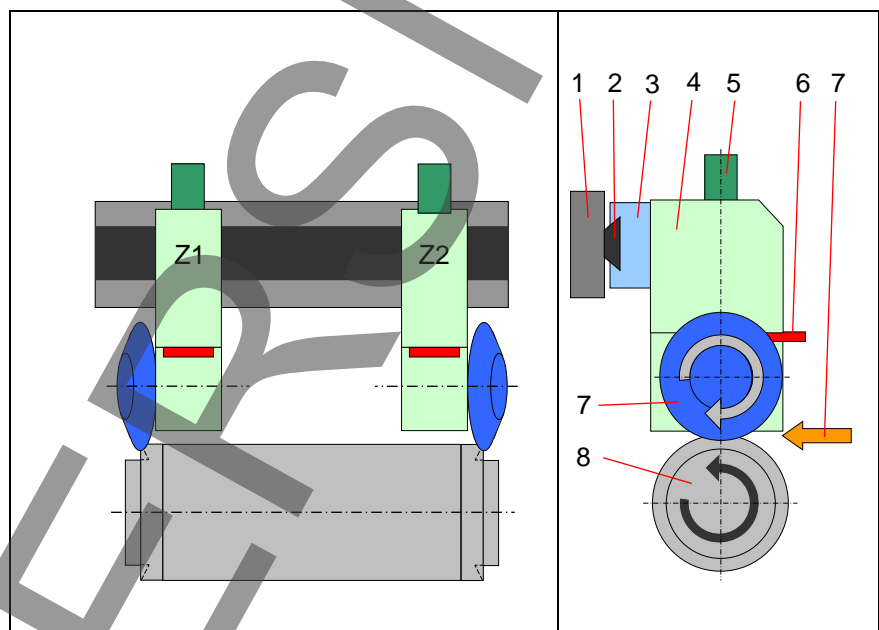


Fig. 28: View from the front

Side view

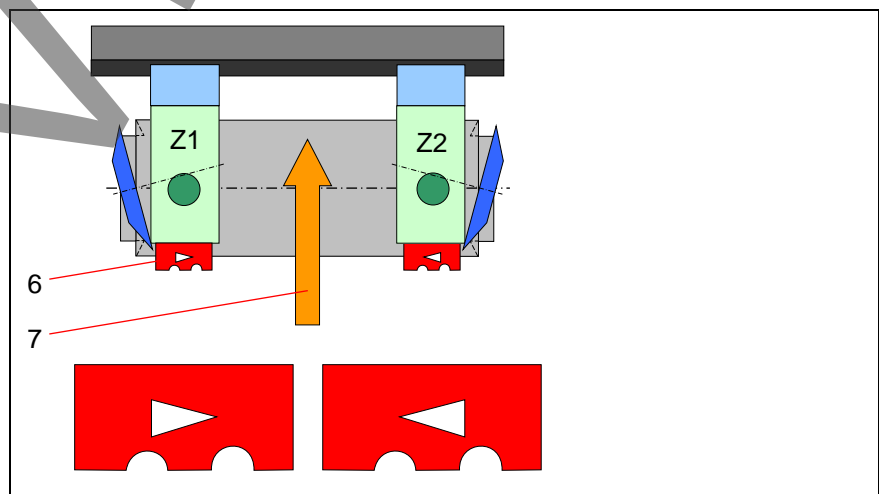
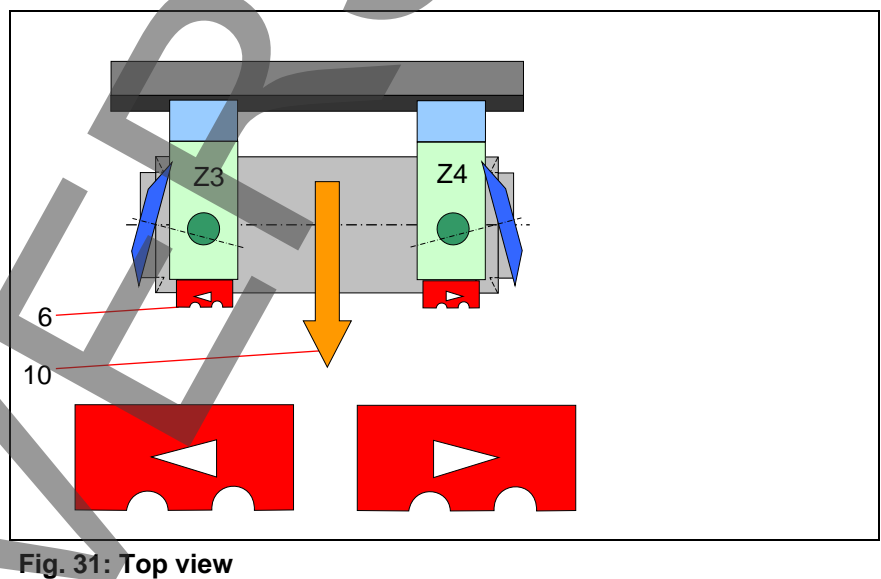
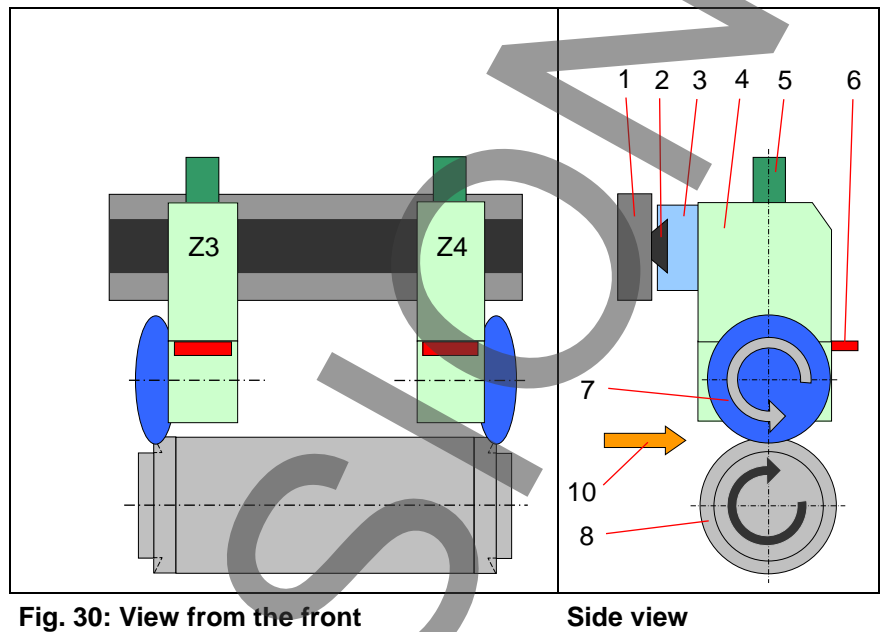


Fig. 29: Top view

5.4.2 Web entry from the rear, drawing horizontal lift (Z3 and Z4)

- 1 Crossbar (machine frame)
- 2 Dovetail rail
- 3 Adapter
- 4 Knife holder
- 5 Depth adjuster
- 6 Shear angle plate
- 7 Web entry from the front
- 8 Top knife
- 9 Bottom knife
- 10 Web entry from the rear






5.4.3 Adjustment of the shear angle

An angle plate, inserted between the knife holder and the adapter, is used to adjust the shear angle.

In order to change the angle plate, the shear cut knife holder must be separated from the adapter. This allows access to the angle plate, which can then be removed.

While replacing the angle plate, care must be taken to ensure that the new angle plate is inserted in accordance with the web entry and the necessary shear angle.

The shear angle can be identified by the marking on the angle plate (see table).

Shear angle "W"	Marking
0	none
15'	
30'	
45'	

5.4.4 Replacing the shear angle plate

The unit is supplied with a factory-fitted 30° shear angle plate. Depending on the material that is being cut, this plate may have to be replaced with a shear angle plate with a different angle.



Risk of cutting when working in the vicinity of the knife edge.

- Always wear protective gloves when working on the knife holder. (Dienes Order no.: 0FHANDS000001)
- Protect the machine from restarting and unintended movements.



Changing the top knife requires great care.

It is imperative to pay attention to the position of the shear angle plate.

See chapter "Aligning the shear angle plate".

- 1 Knife holder
- 2 Knife head (left)
- 3 Angle plate (30°)
- 4 Knife head retainer
- 5 Web entry from the front
- 6 Angle plate retainer

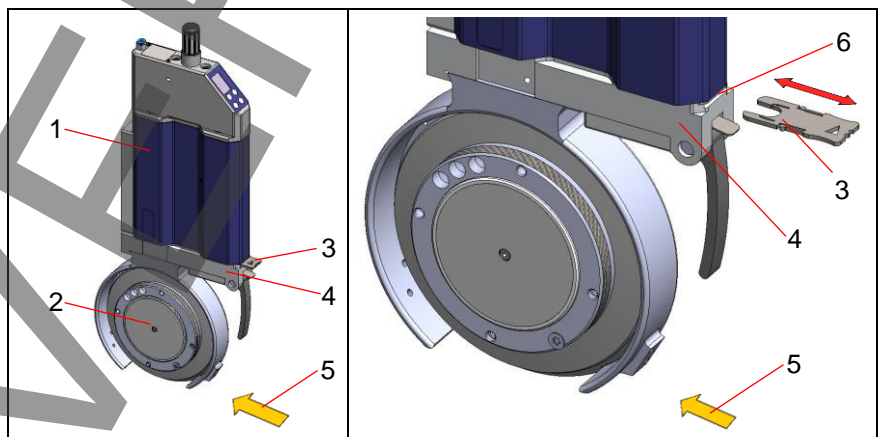


Fig. 32: Z1 = Knife head left, web entry from the front

7 Web entry from the rear

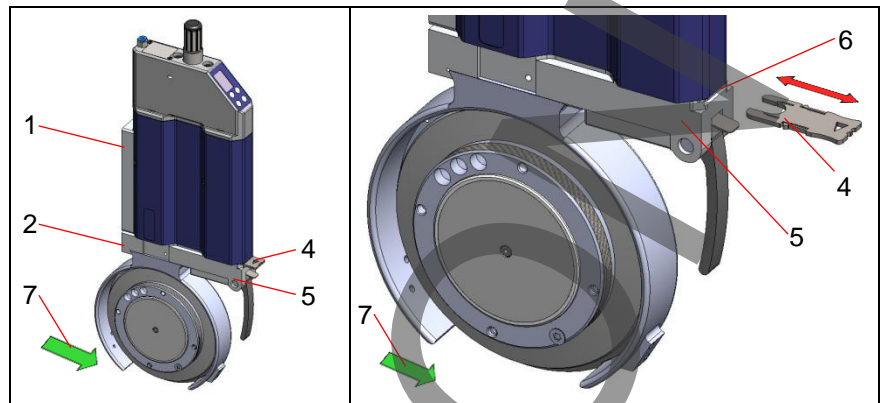


Fig. 33: Z3 = Knife head left, web entry from the rear

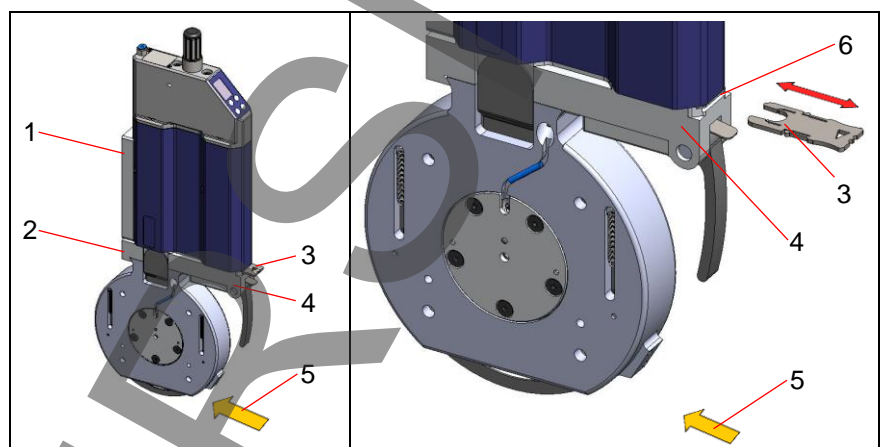


Fig. 34: Z2 = Knife head right, web entry from the front

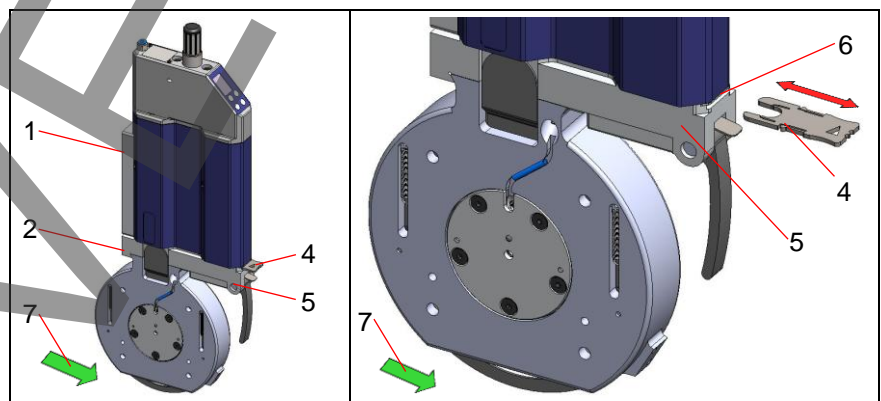


Fig. 35: Z4 = Knife head right, web entry from the rear

5.5 Adjusting the knife holder

5.5.1 Drawing of the shear cut knife holder type DS6 – S



Risk of cutting when working in the vicinity of the knife edge.

- Always wear protective gloves when working on the knife holder.
(Dienes Order no.: 0FHANDS000001)
- Protect the machine from restarting and unintended movements.

P1 Compressed air connection
vertical lift (4 – 6 bar)

- 1 Knife holder body
- 2 Adapter retainer
- 3 Knife head retainer
- 4 Knife head hand guard
- 5 Dished knife
- 6 Ring nut
- 7 Safety screw
- 8 Web entrance from the rear,
optional
- 9 Web entrance from the front,
standard
- 10 Depth adjustment
- 11 Depth adjustment control
- 12 Safety catch
- 13 Knife holder clamping screws
- 14 Retainer options

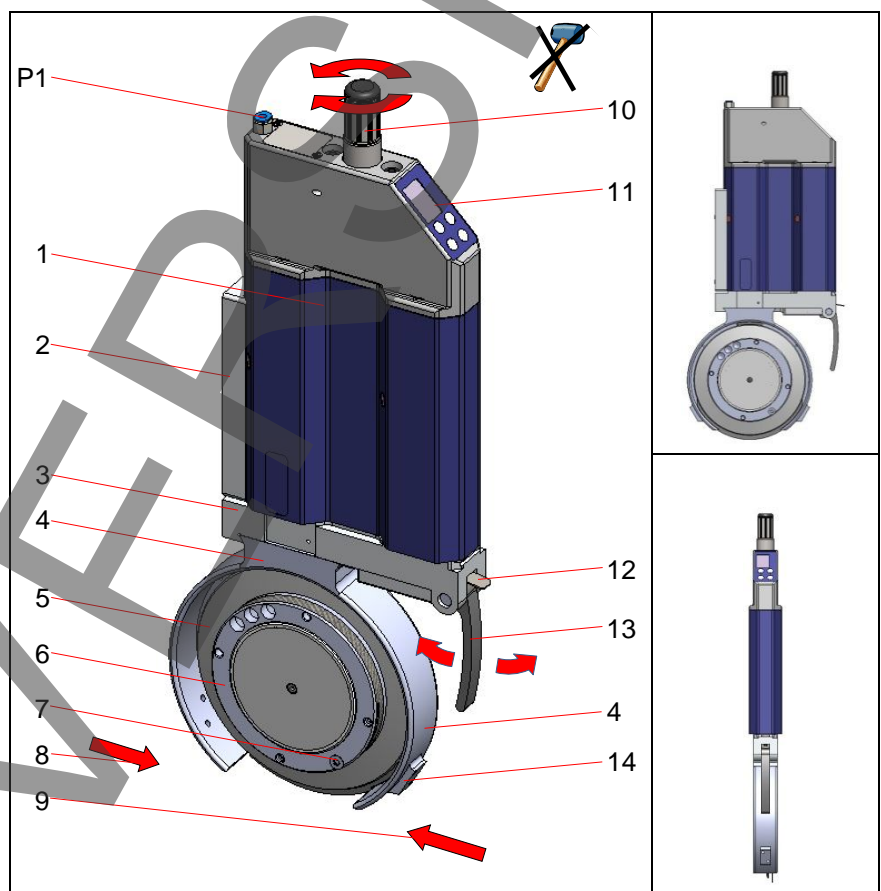


Fig. 36: Knife holder

- 15 Positioning pin
- 16 Dovetail adapter fastening thread
- 17 Fixing thread clamping bolts
- 18 360° safety hand guard

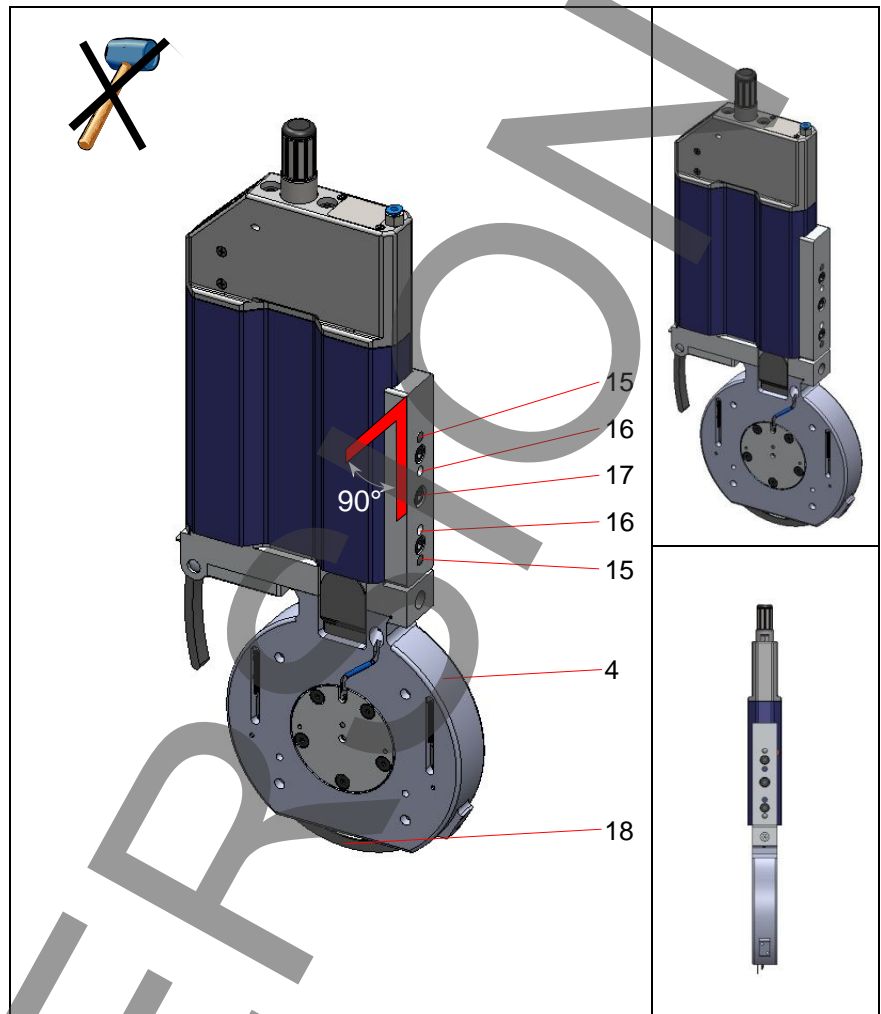


Fig. 37: Knife holder

5.5.2 Depth / overlap depth adjustment

A prerequisite for setting the overlap depth is that the knife holder has undergone a basic alignment.



Caution!

The work requires the utmost care.

- 1 Display
- 2 Activates the control and changes the values +
- 3 Switches menus
- 4 Changes values –
- 5 Activates the change in values and saves these settings

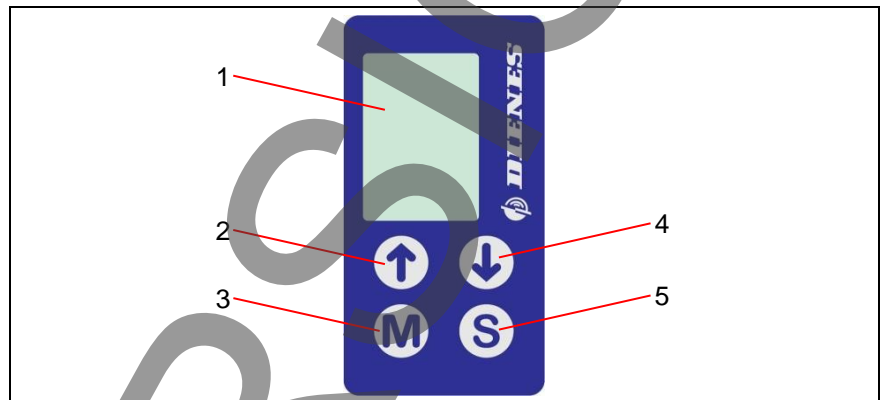



Fig. 38: Display / Control

1. Pressing the  button activates the control unit, after which the "Position" menu or the menu that was last opened will be shown on the screen. Confirm by pressing "S".

- 6 Menu name
- 7 Direction of the adjustment
- 8 Values
- 9 Unit of measurement

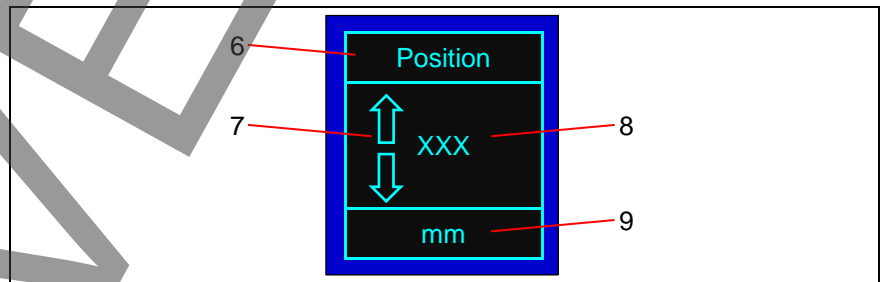


Fig. 39: "Position" menu display

2. Press "M" to switch to the "Overlap" menu.

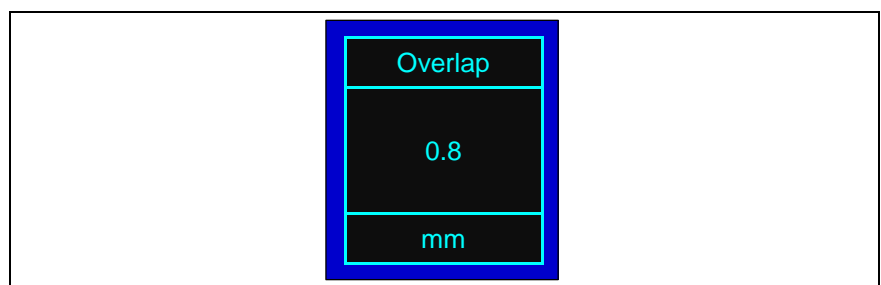


Fig. 40: "Overlap" menu display

3. Adjust the value to "**0.8**" with the arrow buttons and confirm by pressing "**S**". (Guide)

i Please note!

The value for the overlap stated here is a guide value only and might have to be adapted to the material being cut.

4. Press "**M**" to switch to the "**Position**" menu

10 Depth adjusting screw

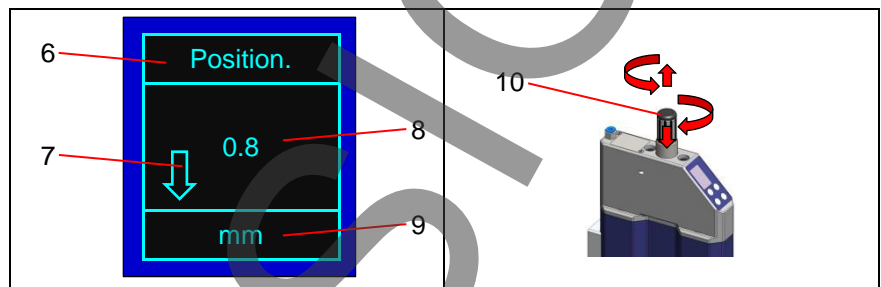


Fig. 41: "Position" menu display

5. Turn the depth adjusting screw in the direction indicated by the arrow until the unit displays the value 0.0 and the arrow extinguishes.
6. This completes the depth adjustment and the knife holder is ready for operation again.

5.5.3 Adjusting the cutting force

The required cutting pressure depends on the cutting speed and the composition of the material web and must be determined under production conditions.

However, the cutting pressure should only be set as high as is necessary to cut the material web with certainty.

The cutting pressure results from the distance of the top knife to the bottom knife, the spring restoring force and the set compressed air loading.

Knife holders with CSL technology constitute a special case in which the spring restoring force is eliminated with the result that a consistent cutting pressure is achieved over the complete horizontal stroke.



Caution!

The maximum permissible operating pressure of 6 bar must not be exceeded under any circumstances. Non-compliance will result in failure of the knife holder. You will find information concerning the max. operating pressure in the technical data sheet.



Note!

All knife holders must have the same axial distance to the bottom knife.

5.6 Positioning the knife holder / Adjusting the format

The cutting position is determined by the cutting edge of the bottom knives. The bottom knife of each knife pair must therefore be positioned first. The top knife holder must then be aligned with the cutting edge of the bottom knife.



Disconnect the compressed air supply before making any adjustments.

Risk of cutting when working in the vicinity of the knife edge.

- Always wear protective gloves when working on the knife holder. (Dienes Order no.: 0FHANDS000001)
- Protect the machine from restarting and unintended movements.



Only the knife holders that have been positioned and are needed for cutting must be activated.

- 1 Top knife
- 2 Gauge
- 3 Bottom knife

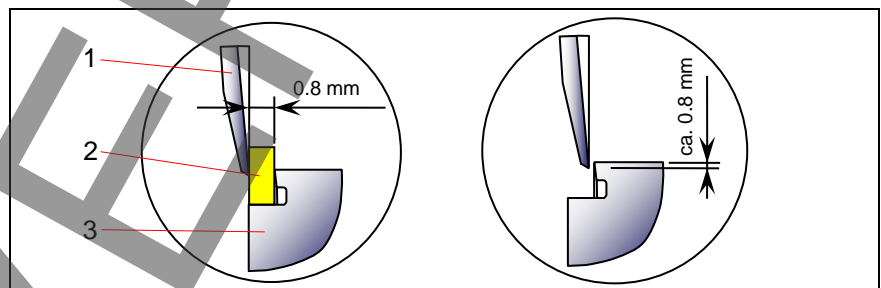


Fig. 42: Parameter settings, standard values top knife to bottom knife



Please note

The values stated here are guide values only and may vary under production conditions.

5.7 Dovetail adapter

- 1 Clamping screw
- 2 Adapter
- 3 Clamping piece
- 4 Knife holder body

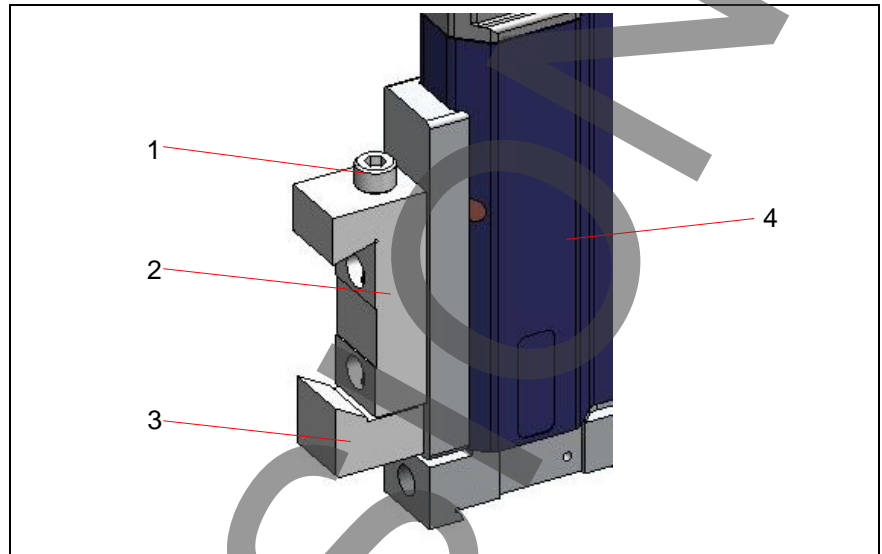


Fig. 43: Clamping (schematic diagram)

1. Move the knife holders into the standby position.
2. Loosen the clamp on the adapter and move the knife holder over the respective cutting groove.
3. Press the knife head downwards by hand and use the plastic gauge to adjust the knife holder to the appropriate axial gap between the dished knife and the cutting edge of the bottom knife. (Guide value 0.8 mm)
4. Tighten the knife holder clamp again.
5. Reconnect the compressed air supply.
The work is now completed.

5.7.1 Linear adapter

- 1 Clamp lever
- 2 Knurled head screw for adjusting the clamping force
- 3 Knurled disc for fine adjustment of positioning
- 4 Top clamping piece
- 5 Pinion
- 6 Linear adapter
- 7 Guide carriage
- 8 Bottom clamping piece
- 9 Knife holder body
- 10 Adjusting nut for the clamping range

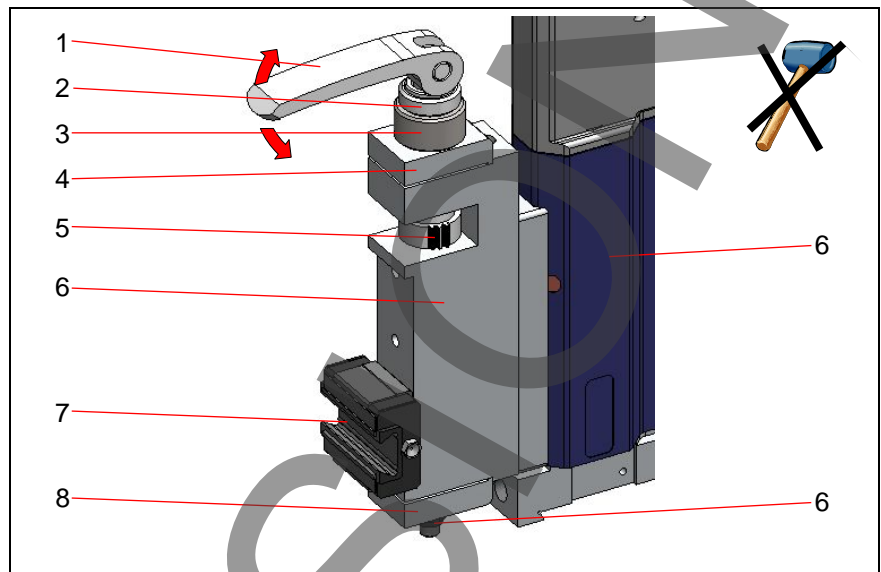


Fig. 44: Clamping (schematic diagram)

1. Move the knife holders into the standby position.
2. Pull the clamp lever up to release the clamp.
3. Position the knife holder over the respective cutting groove.
4. Apply a pressure of approx. 2 bar to the knife holder at compressed air connection P1. Ensure that the lift is complete.
5. Use the knurled disc for the fine adjustment. Align the knife holder to the required axial gap using a plastic gauge. (Guideline value 0.8 mm).
6. Retighten the clamp by pushing the clamp lever down.
7. Move the knife holder into the standby position and reconnect the compressed air supply.
The work is now completed.

5.7.2 Adjusting the clamping range

The adapter is designed for clamping strips with a thickness of approx. 1 mm. It may be necessary to adjust the clamping range.

The adjustment of the clamping range is described below.

1. Open the clamp by releasing the clamp lever.
2. Loosen or tighten the "clamping range adjustment nut" depending on the strip thickness.
3. Close the clamp using the clamp lever and check the clamping force.
4. The clamping force can be fine-adjusted by turning the "clamping force adjusting screw". The work is now completed.

5.8 Knife replacement



Risk of cutting when working in the vicinity of the knife edge.

- Always wear protective gloves when working on the knife holder.
(Dienes Order no.: 0FHANDS000001)
- Protect the machine from restarting and unintended movements.



When cleaning the blade holder, please ensure that no cleaning agent penetrates the bearings. Non-compliance will result in premature failure of the knife holder.

Utmost cleanliness is important while working, since jammed dirt particles affect the lateral trueness of the knife.

Check the new or newly ground knives for true running and lateral deviation after fitting.

- 1 Ring nut
- 2 Safety screw
- 3 Dished knife
- 4 Knife head hand guard
- 5 360° safety hand guard

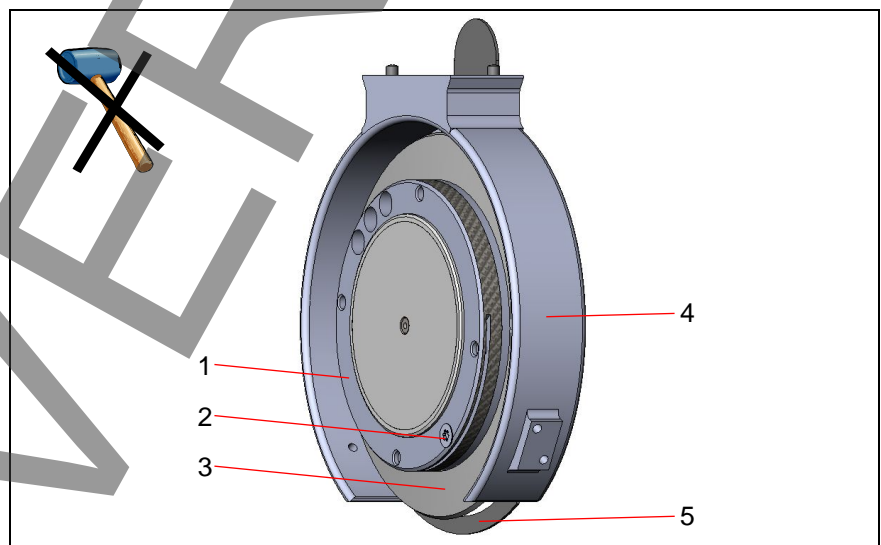


Fig. 45: Knife replacement

1. Disconnect the compressed air supply and protect it against being connected again accidentally

- 6 Block the blade carrier
- 7 e.g. using a box spanner

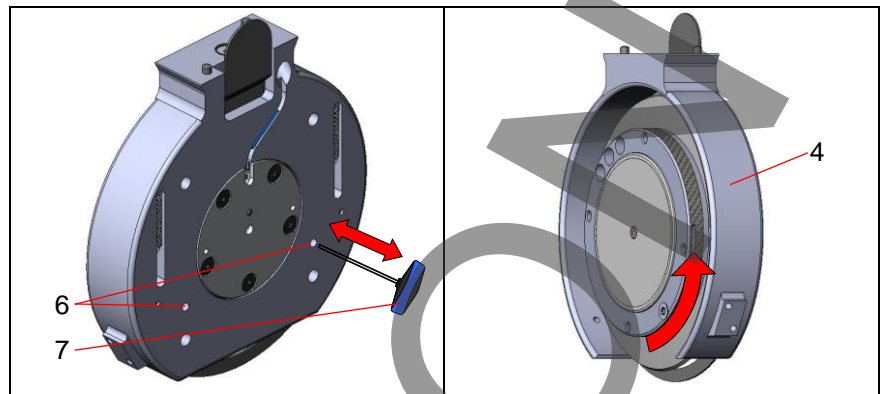


Fig. 46: Blocking the blade carrier

- 8. e.g. insert a box spanner / screwdriver into one of the two holes and turn the blade carrier until the spanner / screwdriver engages. This will stop the blade carrier from turning.

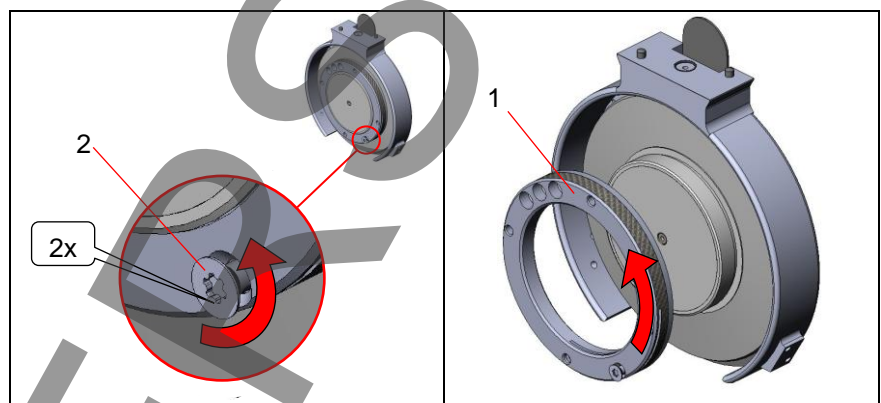


Fig. 47: Safety screw and ring nut

- 9. Loosen the safety screw.
- 10. Remove ring nut.

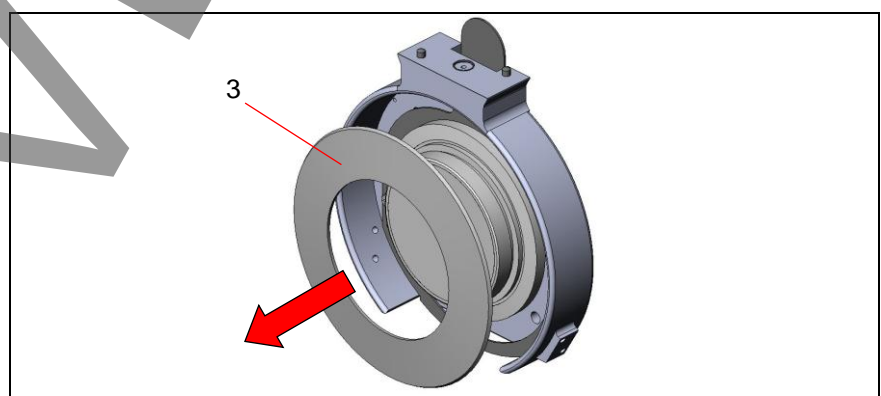


Fig. 48: Dished knife

- 11. Remove the dished knife.
- 12. Clean all components thoroughly!

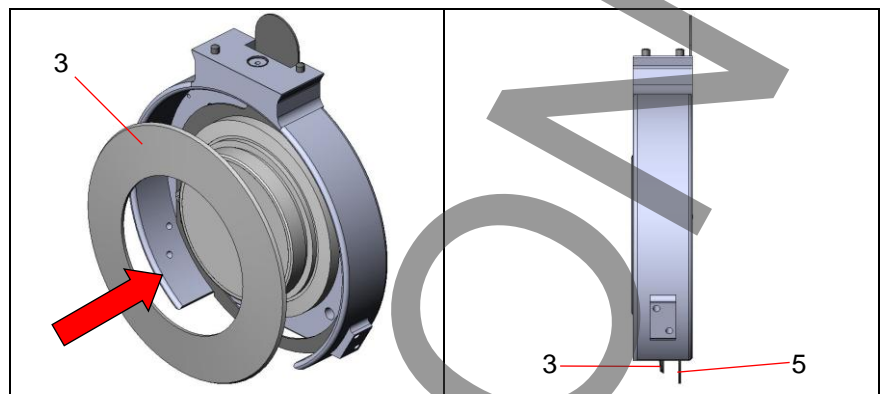


Fig. 49: Fitting the dished knife

13. Fit the new knife to the blade carrier as shown in the diagram.
14. Screw the ring nut onto the blade carrier.
15. Tighten the retaining screw. Tightening torque 1 Nm.
16. Check concentricity of knife.
17. Check and if necessary correct the overlap depth.
18. Reconnect the compressed air supply. This completes the work and the knife holder is ready for operation again.

Please note

Only original DIENES cutting tools ensure trouble-free operation. The diagrams are intended to clarify the principle and may deviate from this actual product.

Dienes Service Line

Repeat orders and regrinding service at

Tel.: 02206 – 605160

www.dienes.de

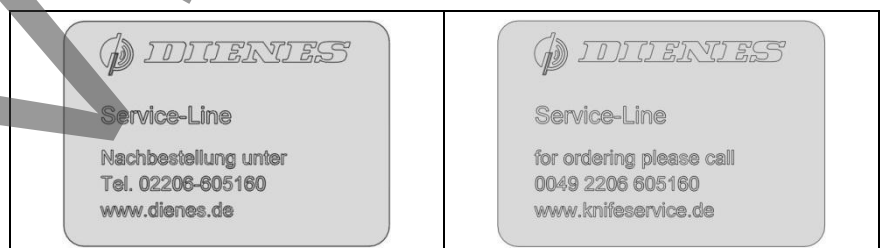


Fig. 50: Dienes Service Line

5.8.1 Adjusting the overlap depth after changing knives

If you need to use dished knives with different regrinding stages, the overlap depth has to be readjusted after the knife has been changed.



Caution!

The work requires the utmost care.

- 1 Display
- 2 Activates the control and changes the values +
- 3 Switches menus
- 4 Change values
- 5 Activates the change in values and saves these settings

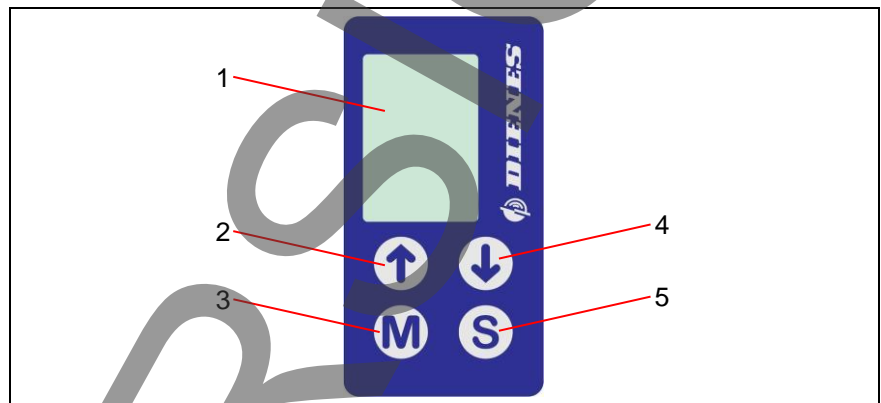



Fig. 51: Display / Control

1. Pressing the  button activates the control unit, after which the "Position" menu will be shown on the screen. Confirm by pressing "S".

- 6 Menu name
- 7 Direction of the adjustment
- 8 Values
- 9 Unit of measurement

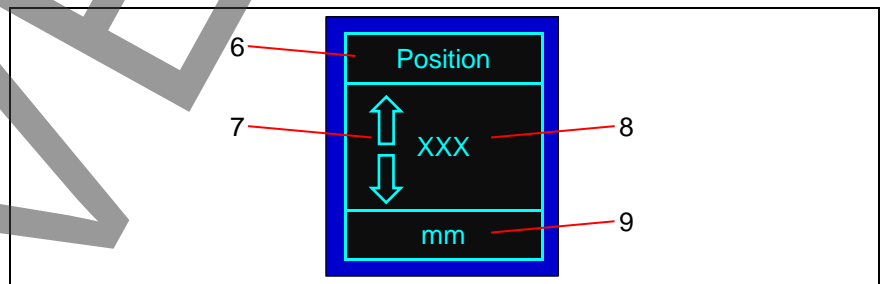


Fig. 52: "Position" menu display

2. Press "M" to switch to the "Knife regrinding diameter" menu.



Fig. 53: "Knife regrinding diameter" menu display

3. Adjust the value to the diameter of the knife used with the arrow buttons and confirm by pressing "**S**".
In this example, this is Ø 129.5mm
4. Press "**M**" to switch to the "**Position**" menu

10 Depth adjusting screw

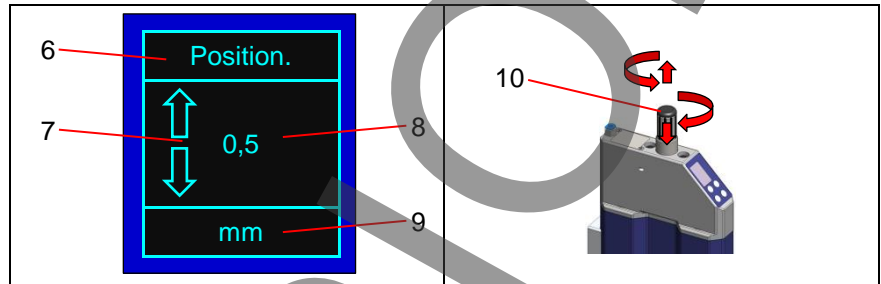


Fig. 54: "Position" menu display

5. Turn the depth adjusting screw in the direction indicated by the arrow until the unit displays the value 0.0.
6. This completes the knife change and the knife holder is ready for operation again.

5.8.2 Removing the "WKS" shear cut replacement head



Risk of cutting when working in the vicinity of the knife edge.

- Always wear protective gloves when working on the knife holder.
(Dienes Order no.: 0FHANDS000001)

- Protect the machine from restarting and unintended movements.

When cleaning the blade holder, please ensure that no cleaning agent penetrates the bearings.

- Do not use compressed air.
- Non-compliance will result in premature failure of the knife holder.

The knife head can be removed from the knife holder body for maintenance purposes or to replace knives. It is fitted with a quick-release clamp for this purpose.

- 1 Knife head retainer
- 2 Knife head prism
- 3 Knife head
- 4 Shear angle plate
- 5 Safety catch
- 6 Eccentric clamp

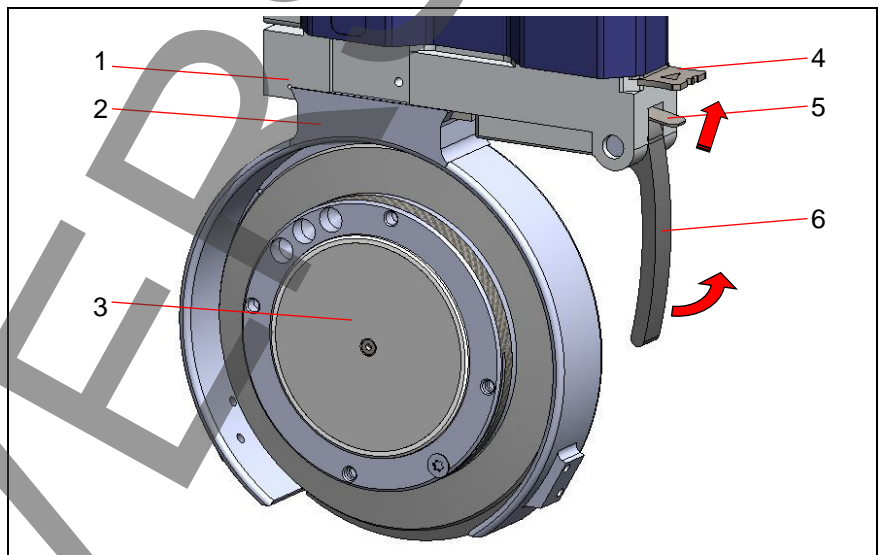


Fig. 55: WKS shear cut replacement head closed

Remove the knife head as described below:

Removal

1. Turn off the compressed air supply to the knife holder and safeguard it against being turned on again accidentally. The knife holder will be in the standby position.

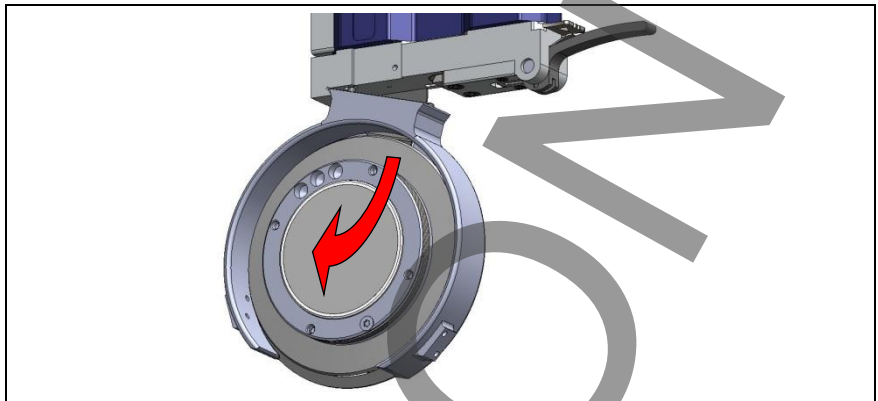


Fig. 56: Removing the WKS shear cut replacement head

2. Hold the knife head with one hand, push up the safety catch with the other and simultaneously pull up the clamp lever.
3. Turn the knife head and pull it downwards from the prism.
4. Clean all components thoroughly. Do not use compressed air for this!

- 7 Centring pin
- 8 O-ring

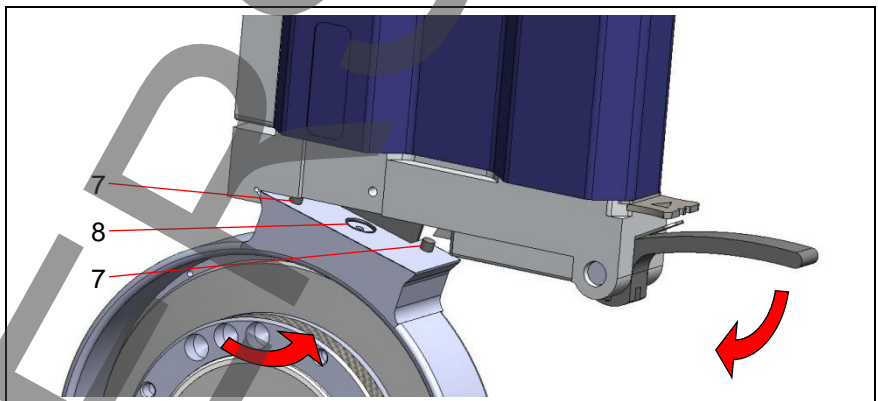


Fig. 57: Fitting the WKS shear cut replacement head (here with the knife head left)

Assembly

5. Check the o-ring and replace with a new one if necessary.
6. Insert the knife head in the required alignment (left / right) into the prism on the holder body.
7. Press the clamp lever down until the safety catch engages.



Caution!

If the knife's alignment is changed, the shear angle plate has to be re-aligned accordingly. Please see the section on "Aligning the shear angle plate".

8. Reconnect the compressed air supply, check the cutting parameters and correct if necessary. This completes the work and the knife holder is ready for operation again.

6 Maintenance

6.1 Safety instructions for servicing

It is imperative that the following safety instructions are observed while servicing the machine – this will prevent fatal personal injuries, damage to the machines, other material damage and damage to the environment.

**Danger!**

Voltage

Faulty electrical connections or unapproved live parts lead to serious injury or even death.

- On principle, only a trained electrician may work on the machine's electrics.
- Replace any damaged cables or plugs immediately.
- Before starting work, the electrical as well as pneumatic power supply is to be disconnected and secured against accidental restart.
- The handling regulations (e.g. earthing, ...) must be followed to the letter for components which are at risk from static electricity.

**Warning!**

Entanglement hazard

Rotating components can draw in body parts and cause serious injury or even death.

- Keep a sufficient distance away from rotating machine components.
- Safeguard the machine against restarting and unintended movement during assembly and maintenance work.
- Under no circumstances put your hand into the machine while it is in operation!

**Caution!**

Cutting hazard



There is a risk of being cut in the area of the knife edge.

- Always wear protective gloves when working on the knife holder. (Dienes Order no.: 0FHANDS000001)
- Safeguard the machine against restarting and unintended movement during maintenance work.



Caution!

Only authorised personnel may carry out cleaning, lubrication and servicing tasks – the operating instructions must be followed to the letter.

Self-locking screws and nuts are always to be renewed.

All quoted screw torques are to be observed to the letter.

In the case of swivelling systems, it must be ensured that these are operated without vibration and are gently swivelled into the end positions.

The sequence of the prescribed work steps must be observed exactly.



Note

The accident prevention regulations must be observed.

All consumables, lubricants and ancillary materials are to be disposed of in an environmentally friendly manner.

Repairs may only be undertaken by authorised service engineers.

6.2 Service and cleaning work

The shear cut knife holders are essentially maintenance-free.

However, it must be ensured that the sliding elements are cleaned at regular intervals. Also the clamping bolts, the centring pin and the installation surface must be kept clean at all times and greased lightly.



Caution!

Dust deposits must be vacuumed off. In order to prevent particles penetrating the guides, compressed air should never be for cleaning purposes.

Cleaning must be carried out at least every three months.

If dust deposits are extremely heavy, the machine must be cleaned at more frequent intervals.

Apply a light coating of oil to parts of the machine that are at risk of corrosion (blued or bare) at monthly intervals. Shorter intervals may be required depending on the humidity.

This does not include the clamping strips, which must not be lubricated because this would adversely affect the clamping effect.

Spray oil must be used that is compatible with the grease that is used at the other lubricating points.

For safety and quality reasons, the maintenance and assembly work on the knife head must be carried out in the manufacturer's factory.



Note

More complicated maintenance and repair work must be carried out in the manufacturer's factory.

If equipment is dismantled on site, Molykote paste BR2 must be used as the lubricant for sliding surfaces, and a lithium soap-based ball bearing grease with consistency class NGLI1 must be used for ball bearings.

Please note that any dust deposits that build up must be removed using a vacuum cleaner only.

Cleaning with compressed air can lead to damage caused by fine dust particles, which can penetrate moving components (linear guides, linear drives etc.).

6.3 Lubrication

6.3.1 Lubrication of the linear adapter



Caution!

All lubricating points are marked as such with stickers.

There is a grease fitting on the side of each guide carriage. The cutting units must be moved apart for lubricating.

Lithium soap-based grease in accordance with DIN 51825 with consistency class NLGI2 in accordance with DIN 51818 must be used as a lubricant.

With the guide carriage it must be ensured that enough grease is pressed into the guides and that any internal soiling is flushed out by moving the guide carriage sideways during the re-greasing procedure.

In order to minimise subsequent dust accumulation, all excess grease that comes out of the guide carriage sealing lips at the sides must be removed completely.

6.3.2 Knife holder lubrication

The bearing points on the knife holder have lifetime lubrication, meaning that re-greasing is not required.

7 Servicing

7.1 Safety instructions for maintenance

It is imperative that the following safety instructions are observed when maintaining the machine - this will prevent fatal personal injuries, damage to the machine, other material damage and damage to the environment.



Danger!
Voltage

Faulty electrical connections or unapproved live parts lead to serious injury or even death.

- In principle, only a trained electrician may work on the machine's electrics.
- Replace any damaged cables or plugs immediately.
- Before starting work, the electrical as well as pneumatic power supply is to be disconnected and secured against accidental restart.
- The handling regulations (e.g. earthing, etc.) must be followed to the letter for components which are at risk from static electricity.



Warning!
Entanglement hazard

Rotating parts can pull in parts of the body and cause severe injuries or even death.

- Keep a sufficient distance away from rotating machine components.
- Safeguard the machine against restarting and unintended movement during assembly and maintenance work.
- Under no circumstances put your hand into the machine while it is in operation!



Caution!
Cutting hazard!



There is a risk of being cut in the area of the knife edge.

- Always wear protective gloves when working on the knife holder. (Dienes Order no.: 0FHANDS000001)
- Safeguard the machine against restarting and unintended movement during maintenance work.



Caution!

Only authorised personnel may carry out cleaning, lubrication and servicing tasks – the operating instructions must be followed to the letter.

Self-locking screws and nuts are always to be renewed.

All quoted screw torques are to be obeyed to the letter.

In the case of swivelling systems, it must be ensured that these are operated without vibration and are gently swivelled into the end positions.

The sequence of the prescribed work steps must be observed exactly.



Note

The accident prevention regulations must be observed.

All consumables, lubricants and ancillary materials are to be disposed of in an environmentally friendly manner.

Repairs may only be undertaken by authorised service engineers.

7.2 Remedial measures in the case of failures

7.2.1 Knife holder

Malfunction	Cause	Remedy
<ul style="list-style-type: none"> Dished knife/ top knife does not move into working position 	<ul style="list-style-type: none"> Knife holder distorted during fitting No compressed air supply or insufficient operating pressure Soiling of the knife holder or gliding planes of the guides 	<ul style="list-style-type: none"> Reposition the tool holder on the holder bar or adapter and align at a right angle Check the pressure supply Clean and lubricate the knife holder
<ul style="list-style-type: none"> Cut edge not exact 	<ul style="list-style-type: none"> Dished knife / top knife or bottom knife damaged Shear angle not correctly aligned to the web Overlap depth set incorrectly Lateral contact pressure of the dished knife / top knife too high or too low 	<ul style="list-style-type: none"> Replace cutting tools Use the angle plate to align the shear angle correctly Correct depth adjustment Correct contact pressure via pressure adjustment / adjusting screw
<ul style="list-style-type: none"> Compressed air escaping from the knife holder 	<ul style="list-style-type: none"> Operating pressure too high or gasket damaged 	<ul style="list-style-type: none"> Correct operating pressure or replace sealing elements
<ul style="list-style-type: none"> Knife service life too short 	<ul style="list-style-type: none"> Cutting pressure too high Shear angle incorrect Knife overlap between top and bottom knife insufficient, top knife edge jumps onto the outer diameter of the bottom knife Knives reground incorrectly Lateral or height runout of the bottom knife too big 	<ul style="list-style-type: none"> Correct operating pressure Check positioning of the shear angle plate (observe web direction) Check knife overlap and readjust if necessary Replace knives Align bottom knife and replace if necessary

8 Taking out of service (scrapping)

8.1 Safety instructions

It is imperative that the following safety instructions are observed during disassembly of the machine – this will prevent fatal personal injuries, damage to the machines, other material damage and damage to the environment.



Danger!
Voltage

The electric and pneumatic power supplies must be disconnected before work is started.

Improper handling of the live parts can lead to serious injury and even death.



Caution!
Cutting hazard



There is a risk of being cut in the area of the knife edge.

- Always wear protective gloves when working on the knife holder.
(Dienes Order no.: 0FHANDS000001)



Note

Dismantling must always be carried out by technically qualified personnel.

Final taking out of service and disposal requires complete de-installation of the power supply.

Machines that are being scrapped should be disposed of in accordance with legal requirements and any local requirements that exist.

9 Accessories available from the DIENES company



Fig. 58: Dienes accessories

1	Protective gloves	Order No.:	0FHANDS000001
2	Exchange tools for PSGm19, used for replacing the knife holder on the shear cut knife holder PSGm19	Order No.:	290A046002001
3	Hexagon screwdriver Size 3	Order No.:	0FWERKZ000005
4	Cross slot screwdriver Size 2K	Order No.:	0FWERKZ000008
5	Torx screwdriver Size = TX 20 x 100	Order No.:	4959051683
6	Hook spanner		
	Ø 48 – 53 mm	Order No.:	290B000028030
	Ø 54 – 60 mm	Order No.:	290B000028040
	Ø 68 – 75 mm	Order No.:	290B000028050
	Ø 80 – 90 mm	Order No.:	290B000028060
	Ø 101 – 109 mm	Order No.:	290B000029030

Ø 110 – 120 mm	Order No.: 290B000028070
Ø 130 – 140 mm	Order No.: 290B000028080
Ø 150 – 160 mm	Order No.: 290B000029050
Ø 205 – 220 mm	Order No.: 290B000029100
Ø 224 – 239 mm	Order No.: 290B000029080
7 Adjustment device used to adjust the knife overlap outside of the cutting station.	Information on request from DIENES
8 Assembly tools for easier knife replacement on the knife holders	Information on request from DIENES
9 Hexagon spanner set Sizes = 1.5 - 2 – 2.5 - 3 - 4 - 5 - 6 - 8 - 10	Order No.: 4959050345
10 Feeler gauge set Set sizes = from 0.05 – 0.3 mm with 0.05 increments, from 0.3 - 1mm with 0.1mm increments	Order No.: 0FWERKZ000016
11 Grease press with grease cartridge	Order No.: 0FFETTP000001



Please note !

In addition Dienes knife cabinets, for safe storage of the knives, and Dienes knife boxes, for safe transportation of the knives, are also available on request, of course.

10 Regrinding service



Dienes Group 48-hour knife regrinding service provided by the manufacturer!

Even the best knives have to be replaced at some time.

Dienes has also made this procedure quicker and safer with sophisticated replacement systems that ensure optimum protection against injury.

The 48-regrinding service for the latest generation of CNC machines is carried out with the same strict quality criteria that you would rightly expect from knives from the Dienes group.

In addition to seminars and in-house training, the regrinding service is an important module in the Dienes Service offer.

The regrinding service includes:

- Hotline (optional)
- Collection
- Cleaning
- Precision measurement
- Group allocation
- 2-phase CNC/NC precision grinding
- "ASO" anti dust surface (optional)
- Testing
- Protocol, test report (optional)
- Shipment

Your partner at the cutting edge of competition worldwide.

For round knives:

Dienes Werke

Kölner Str. 7
D-51491 Overath
Tel. +49 2206 / 60 5 0
Fax +49 2206 / 60 5 111

For straight knives:

JOHANN KRUMM GmbH & Co.KG

Kölner Str. 7
D-51491 Overath
Tel. +49 2206 / 60 5 0
Fax +49 2206 / 60 5 111

For rotary shear knives:

Messerfabrik Neuenkamp GmbH

Neuenkamper Straße 27
D-42855 Remscheid
Tel. +49 2191 / 93 51-0
Fax +49 2191 / 34 09 06

Service Partners:

We would be glad to provide information about other service partners on request.

www.dienes.de

www.messerservice.de